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THIRD MEMOIR OF

THE EGYPT EXPLORATION FUND.

NAUKRATIS.

PART I., 1884-5.

BY

W. M. FLINDERS PETRIE.

WITH CHAPTERS BY

CECIL SMITH; ERNEST GARDNER;

AND

BARCLAY V. HEAD.

PUBLISHED BY ORDER OF THE COMMITTEE.

LONDON:

MESSRS. TRÜBNER & CO., 57 & 59, LUDGATE HILL, E.C.

1886.

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J. S. Bailey

1887

Η ΠΟΛΙΣ Η ΝΑΥΚΡΑΤΙΤΩΝ.

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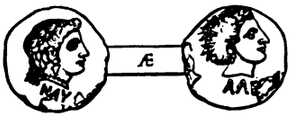

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PREFACE.

It is a golden principle to let each year see the publication of the year's work, in any research; but a writer places himself thus at the disadvantage of showing how his information may have been defective, or his views requiring change, as year after year goes on. Such a course, however, is the most honest and the most useful, as half a loaf is better than no bread. This volume, therefore, with all its imperfections, its half-gleaned results, its transitory views, comes forth to show what is already ascertained; and to supply a mass of certain facts for the assimilation of scholars, who may accept or not the way in which they are built up.

It may be said that further research in what is already known ought to have been made, before placing results in such a form. I think not. So long as enough study is given to the materials to present them in an intelligible and usable form, it is better to let them be at the disposal of all students, without waiting for a final summing up at the close of the excavations; for no results can be final until we have completed all that modern civilization will do toward preserving the history of Naukratis. It is this book or nothing that is the choice; for my time has been so occupied in the lengthy work of unpacking over seventy cases of antiquities, arranging them, and preparing most of the plates which accompany this volume, that I had to be content with far less research than I had wished for and intended; and further, many unexpected affairs connected with this Fund have unavoidably swallowed up my remaining days, so that I have had to write the greater part of this volume at a hurried pace and without power of referring to the antiquities themselves.

Had it not been for the special labours of those who have assisted in working out the present results, Mr. Head, Mr. Ernest Gardner, and Mr. Cecil Smith, it would have been impossible to make the account as complete as it is; for neither time nor technical knowledge would have sufficed me to treat these

sections in an adequate way. It has therefore been most satisfactory to me that so much has fallen into the best hands, and that they have made so large a part of the work their own.

The work of excavating was jointly superintended by Mr. F. Ll. Griffith and myself; and in those parts of it which I was prevented from attending to by other work, I have had to rely largely on Mr. Griffith's notes. Those portions which he attended to principally were the latter part of clearing the chambers in the Great Temenos, and the clearing of the Temenos of Apollo. That his name does not appear to any part of this volume is due to his having been more congenially occupied since his return, in work upon some of the Egyptian papyri which I brought from Tanis the previous year.

In the preparation of the plates I have had the assistance of most willing volunteers, whose initials will be seen on their work. Eight plates have been drawn by Mr. Percy Newberry, three by Mr. Gerald Horsley, and one by Mr. Ernest Gardner on his own subject: of the other plates, four are produced by the Autotype Company, and thirty are my own drawings.

My best hope is that the present volume will prove to have been but the first taste of a deep draught of the history of the early Greeks; drawn from a country which even in their days was worn and aged, with the remembrance of conquests and disasters, of cycles and dynasties, dimly seen in the past behind it.

W. M. FLINDERS PETRIE.

BROMLEY, KENT,
November 20, 1885.

NOTE.

FURTHER exploration at Naukratis with Mr. Ernest Gardner and Mr. Griffith since this volume was written, obliges me to add a note. It is found that the area which I had supposed to be possibly the Palaistra is—in part at least—the Heraion, also that some remains of the temple of the Dioskouroi existed in their temenos; that some of the street lines at the S.W. of the town should be slightly altered around the massive building of which the E. side had not been found when making the plan here given, and that that building is the temple of Aphrodite; that far greater quantities of the Naukratite pottery were obtainable there, quite eclipsing the plate of specimens here illustrated; also that an approach to the Great Temenos existed on the canal side, where we found portions of marble rams, and a large sphinx in red granite. Further examples of combinations of mud, brick, and stonework, which I have examined elsewhere, indicate that it is at least possible that the building in the gateway of the Great Temenos lay wholly within the thin brick wall there; that wall perhaps being only a retaining wall to the foundation.

W. M. F. P.

July 6, 1886.

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NAUKRATIS.

CHAPTER I.

THE SITE OF NAUKRATIS, AND ITS HISTORY.

1. The question of the position of Naukratis has long been an undecided one; and for the very good reason that no part of the world, so close to a large Western population, and so essential to archæology, is such unknown ground as the Delta of Egypt. There are hundreds of English travellers who are familiar with Upper Egypt and its towns; but it would be easier to find anyone to give a scientific personal account of the sources of the Nile, than one who could give an archæological account of the remains thickly scattered about its mouths. Yet this ground is within a week's journey of our homes.

The first search for Naukratis, if I may call it so, is described in a paper by Silk Buckingham, in the original papers of the Syro-Egyptian Society, 1845. This, however, only describes a visit to Sa-el-Hajar, which he assumed to be the site of Naukratis. No excavations, or evidence for this indentification, are mentioned; and it is now recognised by all that the Arab Sa is Sa of the Egyptians, the Greek Sais. So this paper brings us no nearer to Naukratis. Then it has been supposed, on the strength of Herodotos and Strabo, that Naukratis was near Desuk. I went there, and inquired for any mounds known up or down the east bank of the stream, but none were to be seen or heard of.

2. All this while the two most accurate and definite authorities on the subject were disregarded—the Geographia of Ptolemy, and the Peutingerian map. Let us see what they say. Ptolemy expressly describes Naukratis as being on the west of the Great River. Now the Great River is not the Saitic branch, but the Kanobic branch, which is westward of the Saitic; thus he places two rivers—the Saitic and the Kanobic—between Sais and Naukratis. Further, he gives the latitude and longitude of it, which, when compared with those of the neighbouring sites, indicate the position of the mound of Nebireh (at which I have been working this year) within two or three miles. For the details of the treatment of Ptolemy's Geographia, I must refer to Chapter XI., where the whole subject is discussed. The most superficial view will, at least, show that a city which is placed by Ptolemy with two branches of the river between it and Sais, and in the same latitude as Sais, but a quarter of a degree further to the west, cannot be on the same side of the same river as Sais, some miles north of it, and in the same longitude. Both by description of its site, and by position on the rivers, Ptolemy distinctly excludes, without the risk from bad copyists, the possibility of Naukratis being near Desuk, and, furthermore, places it certainly within a few miles of the mound of Nebireh.

3. The next most distinct authority is that of the copy of a Roman road-map, which first came to notice in the hands of old Conrad Peutinger. This would be a supreme authority were it not for its numerous omissions and errata.

But these errata are natural consequences of bad copying from injured material; such as corrupting Thmuis into Tmu, misstating numerals, or omitting names and numerals altogether: they do not affect the arrangement of it, so far as we can judge, and its value for our purposes is therefore scarcely impaired. A glance at the copy in pl. 39 (enlarged to double the scale from the only edition in the British Museum, Ortelius, 1618), will show that its agreement with Ptolemy concerning the position of Naukratis is as close as could be expected from its distorted form. The broad fact that the city lay some way to the west of the Kanobic branch is as plain there as in the text of Ptolemy; and we further see Naukratis did not lie on the road to Alexandria from Memphis, but on the road to the Libyan desert, which did not lead to Alexandria, but lay entirely to the west. The distances are evidently corrupt on any supposition; but as Nebireh is about twelve or thirteen miles from the probable site of Niciu (Ed-Dahariyeh), the numeral xliii. may well have been xiiii.; the farther numerals may be correct, as xxxii. + xxiiii. miles would reach from Nebireh to the hills on the west of Lake Mareotis, the place where the road would naturally run, to join the North-African coast road. We should therefore look for Melcati near Tell-abu-Gaud; but the numbers of miles are such evident multiples of eight, probably half a day's journey, that we cannot attach much value to the precise locality.

The third great authority for ancient geography, the Roman road-book, commonly called the Itinerary of Antoninus, or the Theodosian Table, is useless in this question, as it does not mention Naukratis. There is at least, however, a possibility that Nithine may be a corruption of Naukratis, since it is placed between Andro and Hermopolis, on the line in which Naukratis lies.

4. Turning now to secondary geographical authorities, Herodotos gives more than one statement which bears upon the site of Naukratis. First he says (ii. 97):—"During the inundation, to a person sailing from Naukratis to Memphis, the passage is by the pyramids; this, however, is not the usual course, but by the point of the Delta and the city of Kerkasoros; and in sailing from the sea and Kanobos to Naukratis across the plain you will pass by the city of Anthulla and that called Archandros." Now there is somewhat to be gleaned from this notice. First, it was possible to go up from Naukratis to Memphis by a canal without going by the point of the Delta and Kerkasoros. This would be an impossibility if Naukratis lay on the Saitic arm, or in fact anywhere within the branches of the Delta; it must therefore lie outside of the westernmost or Kanobic branch. Next, it is strongly suggested that it lay on a canal and not on the river, since it is said that a passage could be made from Naukratis to Memphis past the pyramids, or rather "alongside of the pyramids themselves" (παρ' αὐτὰς τὰς πυραμίδας). This plainly refers to the canal still to be seen running just below the pyramid hill, in contradistinction to the ordinary Nile stream. I was informed by an old Arab some years ago that this canal can be traced as far north as the Barrage, and I noted the course of it in detail by the position of the villages as he described them; while from the Barrage it is still possible to sail to Nebireh by the canal skirting the desert, without once entering the Nile. Thus the old line described, by which the Greeks sailed up from Naukratis to Memphis past the pyramids, is still visible, and nearly all in use as a canal at the present day. The Greek route during low Nile, when there was not enough water in the canal for a vessel, must then have been to pass out from the Naukratis canal into the Great River, or Kanobic branch, probably near the modern Selamun, where the canal still joins the Nile.

Another passage of geographical value is in ii. 179:—"If a man arrived at any other mouth of the Nile, he was obliged to swear that he had come there against his will; and, having taken such an oath, he must sail in the same ship to the Kanobic

mouth . . . . so great were the privileges of Naukratis." Here we learn that the way to Naukratis lay up the Kanobic mouth, and, moreover, that the Saitic would not even lead to Naukratis directly, since from any other mouth the Saitic would be nearer than the Kanobic; yet the storm-strayed mariner must go to the Kanobic mouth to reach his only port. Naukratis therefore cannot possibly have been on the Saitic branch, but must have lain so that its water-way opened up the Kanobic stream, or Great River.

5. Strabo gives two geographical indications. He says (xvii. 1. 23), that above Momemphis are two nitre mines, and the Nitriote nome; in this nome, and near this place, is Menelaos; on the left, in the Delta, upon the river, is Naukratis; at two schœni from the river is Sais. Now we must first see what river he means. Sais is two schœni, or about thirteen miles distant from it, and he is mentioning the line of sailing from Schedia (near Alexandria) to Memphis. He is therefore probably referring to the Great River, or Agathodaimon of Ptolemy, the Kanobic branch; and the distance from Sais, somewhere between one and a half and two and a half schœni, or ten to sixteen miles, would just agree with this, as Sais is nine miles direct from the nearest point of the Kanobic arm, and was therefore probably about twelve miles by road or canal. Naukratis he places on this river, and therefore clearly on the Kanobic and not the Saitic branch. The position on the left of the river is ambiguous. A modern so speaking would of course mean on the west of the Nile, unless he were describing a journey up the river; this, however, seems to be the case with Strabo, who must therefore mean the east by the left of the river. This is further shown by his naming the Menelaite nome as on the right of the Kanobic mouth, on the west of which it lay, according to Ptolemy. The other mention of many villages on the right hand of the river, as far as Lake Mareia, again points to the right being the west. The regular custom of the country at present is to speak of Lower and Upper Egypt as if looking south; and the natural habit of northerners, as the Greeks were, would regard the country from the north. We must therefore read Strabo as saying that Naukratis lay on the east of the Great River. This is so directly contradicted by all the other authors, who indicate the position, that we must seek its explanation, rather than consider it as causing any uncertainty. When we know that the canal for sea-going ships, by which the mound of Nebireh was reached, was on the west of the site, it is not hard to suppose that Strabo was informed that Naukratis lay on the left or east of the river by which the shipping arrived, and concluded that that was the Great River. Such a slip would be very liable to occur to any writer who was not careful to distinguish in his information between a navigable canal and the river from which it branched, and within three or four miles of which it ran.

The other mention by Strabo is that the Milesians sailed up to the Saitic nome, and having conquered Inaros in a sea-fight, founded Naukratis not far above Schedia. This indicates but little: the Great River was probably reckoned as passing through the Saitic nome, before the Naukratian nome was separated, so that we cannot conclude which arm is here indicated; and the mention of Schedia is not decisive, inasmuch as it means a raft, or perhaps a bridge of boats, and so the name might occur anywhere on a river, just as a Klusma might be found on any shore. So far as we can identify it, Schedia is said by Strabo to be four schœni from Alexandria. This would place it as far inland as Abu Homs; and "not far above Schedia," would hardly perhaps suggest a site nearly as far from Schedia, as Schedia was from Alexandria. At least we cannot say there is anything here to contradict the other authors; and if there was but one Schedia, this again would show Naukratis to have been near the Kanobic arm, on which Schedia lay, and not on the Saitic.

Pliny mentions the Naukratian nome in the list of nomes (v. 9); but nothing precise as to place

can be deduced from so irregular a catalogue. He names Naukratis, however, in the towns of the Delta (v. 11), and gives a valuable indication, saying, "from which some writers call that the Naukratic mouth, which is by others called the Herakleotic, and mention it instead of the Kanobic, which is next to it." Here we have yet another distinct testimony to Naukratis being near the Great River, and not on the Saitic branch.

Stephen of Byzantium mentions Naukratis, without any exact indication of its site.

6. We now have seen that all the ancient authorities, Ptolemy, the Peutingerian map, Herodotos, Strabo, and Pliny, each mention such details about Naukratis, as to show independantly that it lay near the Kanobic branch of the Nile, or Great River, and not on the Saitic branch, where it has so perversely been supposed to exist. The only possible origin for such an idea seems to be the statements of Strabo, that the Milesians sailed into the Saitic nome when they founded Naukratis, and that it was on the left, or east, of the river, which seems to have been assumed to be the river of Sais, though Sais is said to be thirteen miles from this river. This very description shows that Naukratis was near the Great River, besides the mention of Schedia, which probably shows the same. The only contradiction that can be alleged, is that Strabo says Naukratis was on the east of the river, while Ptolemy, Peutinger's map, and Herodotos, all show it to have been on the west of the Kanobic arm: the fact of its lying on the east of the canal, by which ships approached it, is enough to explain this difficulty.

Having now shown how the mound of Nebireh, or its immediate neighbourhood, is the site of Naukratis, according to our geographical information, I shall henceforward apply the name of Naukratis directly to this mound, and to the ancient city which it covers; the mound in which the only known decree of the city of Naukratis, and the only two autonomous coins of that city, were found; the mound which contained archaic temples of Apollo and of Aphrodite, as Naukratis did, according to Herodotos and Athenaios; the mound which covers a great commercial emporium abounding in weights, and a centre of Greek trade and manufactures; the mound, whose whole history, from its flourishing times in the archaic Greek period downwards, agrees with the history of Naukratis, and of no other Greek city known to have existed.

7. We now turn to the history of Naukratis, so far as it is known to us from ancient authors, and from the remains of the city. First, we may clear the ground by dismissing the statement of Strabo, that the Milesians founded Naukratis after conquering Inaros in a sea-fight: this would place its foundation in the fifth century B.C.; whereas, to say the least, Amasis granted it privileges in the sixth century. It may be that it was resettled by Milesians after it had decayed under the Persian rule, or possibly another and earlier Inaros is intended. Whatever the explanation may be, we cannot make use of this statement.

From Herodotos we may see that the city of Naukratis existed before the reign of Amasis, since he says that that king "gave the city of Naukratis for such as arrived in Egypt to dwell in." This shows that the city existed already, or the expression would have been that he gave the Greeks the privilege of founding a city at a place which they named Naukratis. Before 570 then is the literary date for the foundation of Naukratis. An incidental proof of the early date assigned by the Greeks to the settlement at Naukratis is in a passage of Athenaios (xv. 18) in which he quotes Polycharmos of Naukratis as describing a certain Herostratos, a merchant of Naukratis, trading there from Cyprus in the twenty-third Olympiad, or 688 B.C.; and dedicating a statue of Aphrodite there in a temple of that goddess. The statue is said to have been a span high, and of very ancient workmanship. This at least shows that in the time of Polycharmos the foundation of Naukratis must have been supposed to have taken place in very remote times.

On turning to the city itself, we meet with two ways of dating its earliest remains, by the style of the pottery, and by the historical remains found. The style of the earliest pottery here is such, as is at the lowest date placed in the seventh century B.C. The Phœnician-Greek ware, as it is called, is often found; and found in the temenos of Apollo some way above the earliest remains. This would then bring the foundation of the city to at least the middle of the seventh century. Another guide, and the most exact, is the factory of scarabæi; they were made here in large quantities, and though moulded at the back the designs were always hand-cut, so that the use of old moulds is out of the question for the under side. The design must belong to the time of manufacture. Now many of Psamtik I. are found, and some of Psamtik II., and several which belong either to Psamtik I. or Uah-ab-ra, and probably to the latter. This brings the factory as low as about 580 B.C. But here it stops, and not one scarab of the great, prosperous, and long-reigning king, Amasis, who patronised the Greeks so largely, is to be found. This distinctly marks the factory as extinct before his reign, and therefore about 570 B.C. But below the bottom of the stratum in which the scarabs were found, there lies two feet lower a black burnt stratum full of charcoal and ashes, which forms almost the earliest stratum of the whole southern half of the town. According to the average rate of accumulation of earth during Greek times this bed of two feet would represent about half a century. And half a century before the beginning of the scarab factory would lead us to about the middle of the seventh century B.C.

If then we find that a general conflagration of the city took place about this period, we should turn to historical sources to see what events are probably connected with it. There are two suppositions the choice of which must depend on the age to be assigned to the earliest pottery. Most probably the Greeks had settled here during the disruption caused by the Assyrian invasions, when the absence of a native government—the power being contested by Assyrians and Ethiopians—would leave the restrictions against foreigners in a lax state. This would then give a date of before 670 B.C. for the foundation of the Greek city; that it was somewhat early in these troublous times may be supposed, from the burning down of the town; this would most likely occur in a war, and the only wars to which we can assign it are those before the settled period of Psamtik I., *i.e.* the wars of the Assyrians and Tahraka about 670 B.C. Probably such a trading settlement would not be a very permanent or important place at first, and the great quantity of charcoal and ash from the burning suggests that it may have been mainly of wood, and of wattle and daub. The more permanent houses, with thick walls of mud-brick were probably begun under the firm government of Psamtik I., who favoured the Greeks, and gave settlements to his auxiliaries toward the eastern frontier of the Delta. After the Greeks were firmly established here with a regular town of houses, they would then have erected solid temples and dedicated the valuable vases and bowls which we have found. This would place the beginning of the temple period about 650 to 630 B.C.: and this, which is the earlier scheme of dating, seems to fit best to historical facts.

On the other hand it is quite possible that the first settlement may not have been until the reign of Psamtik I., about 650; that the burning might be an accidental conflagration in peace and not in war, perhaps 630 or 620; and that the reconstruction of the town, and the foundation of important temples might not occur till 610 to 600 B.C. This however would be somewhat a strain on the dating of the earliest figured pottery found here: and the earlier dating appears the more likely one.

8. From the character of the pottery dedicated in the temple of Apollo, we may conclude that the first temple would be in existence as early as 610 or 620 B.C., and perhaps before that. There are no fragments of any temple earlier than those

represented on pl. iii., and hence these may be dated to about 620 B.C., or the end of the reign of Psamtik I. An indication of the Milesian Apollo being prominently known and honoured in Egypt, and therefore doubtless having a temple there, in the seventh century, may be seen in the fact of Neqo in 608 dedicating his corslet to Apollo of the Milesians at the mother temple of Branchidæ (Herod. ii. 159). The temenos wall of the temple seems to be of a later age, as by the level of it it may probably be about 550 B.C., and the bricks are most like those of even two centuries later. I should be inclined to suppose that the ground in the sacred enclosure did not rise rapidly by accumulations as in the town, and that perhaps digging a foundation has lowered the foot of the wall, so that we might attribute it to the building of the second temple about 440 B.C. Some temenos doubtless existed from the earliest dedication of a temple, but it may have been entirely ruined when the first temple was destroyed.

The Great Temenos we have no exact means of dating at present; if it were the Pan-Hellenion, which seems to follow from the statement of Herodotos that that temenos was the largest at Naukratis, then it would probably be as early as the other temenē in the town. That it was injured, and the block of chambers in it in a damaged state, at about 300 B.C., we may be certain, as at that time Ptolemy II. (as we shall see in Chapter IV.) largely repaired it. Hence its age would well agree with its being the Pan-Hellenion. The most distinct evidence of its age is that afforded by the brickwork. So far as I have collected the sizes of bricks in Egypt, it appears that from the twenty-sixth dynasty down to late Roman times the sizes steadily decreased, about an inch in length per century; and in scarcely any case of plainly dated bricks that I know of is there a variation of as much as one inch in one century from this scale. In the walls and citadel of Sais the bricks are $17{\cdot}2 \times 8{\cdot}0$ (the thickness is always variable) at about 650 B.C.; at Kom Afrin, perhaps about 600 B.C., the size is $16{\cdot}3 \times 7{\cdot}4$; at Naukratis, about 600 or 550 B.C., according to pottery, the size is $16 \times 7{\cdot}9$; and the Great Temenos and chambers within it are of bricks $16{\cdot}3 \times 8{\cdot}3$. Hence we should expect that the Great Temenos belongs to the earlier part of the twenty-sixth dynasty, and not to the Persian period. In contrast to these sizes of bricks, those of the Ptolemaic building, about 260 B.C., in the gateway, are $14{\cdot}8 \times 7{\cdot}2$, or rather less than those which we can date to about 350 B.C. All the details will be found in Chapter X. Historically speaking, we should expect the Pan-Hellenion to have been founded at about the same time as the other archaic temples, perhaps about 620 B.C., when the town was evidently in a flourishing state, as shown by the quantities of archaic pottery found, and its wide distribution on the site.

9. A reverse to the prosperity of Naukratis may be seen in the total cessation of the considerable manufacture of scarabæi; if other trades carried their age in their faces in the same manner, we might very likely see the same thing in all the manufactures; but in the scarabæi the change is striking, as I have already mentioned, and points to a check of a temporary but sharp nature at about the beginning of the reign of Amasis. This exactly agrees with what Herodotos records of the usurpation of Amasis over his adoptive brother and co-regent Apries, in ii. 163: "When Apries heard of this, he armed his auxiliaries and marched against the Egyptians; he had with him Carian and Ionian auxiliaries to the number of thirty thousand . . . Now Apries' party advanced against the Egyptians, and the party of Amasis against the foreigners . . . 169 . . . and the foreigners fought well, but being far inferior in numbers, were, on that account, defeated." Here there must have been an immense disruption of all Greek business, when thirty thousand Greeks—all that could be drawn for levies in the greatest emergency—were defeated and scattered, and the conqueror marched on the capital, Sais, and occupied it, within a few miles of the head-

quarters of the vanquished Greeks at Naukratis. Such a blow must have upset all commerce for some time; and, even apart from any revenge on the Greek city, would give good cause for the cessation of fancy manufactures.

This breach, however, was healed before long; and Amasis, conscious of the valuable qualities of his opponents, the Greeks, and knowing that to mercenary troops a change of masters is not difficult, threw himself warmly on the Greek side, and appears to have reckoned on securing himself by the mutual jealousy of Greeks and Egyptians. He adopted the Greek troops, which Psammitichos had settled in the east of the Delta as his body-guard, and removed them to Memphis (Herod. ii. 154). In this we may perhaps see, however, a back-handed favour to the Egyptians. This settlement, which Psamtik I. had granted to his Greek auxiliaries, was a powerful connection with Greece, and therefore doubtless a centre of trade; Herodotos says, "From the time of the settlement of these people in Egypt, we Greeks have had such constant communication with them, that we are accurately informed of all that has happened in Egypt, beginning from the reign of Psammitichos to the present time." To realize how much such a connection was worth for history in the time of Herodotos, we might make the parallel between this settlement and the English at Calcutta; the first settlement there being under William and Mary, as long ago now as Psamtik was before Herodotos, events under George the First would be about parallel to the reign of Apries; the "good old times" of George the Third, a long and prosperous reign, would parallel the days of Amasis; and the history of our own times, since Waterloo, is as fresh as the Persian period was to Herodotos.

Now Amasis had seized the supreme authority with the aid of the old Egyptian party, as against the Phil-Hellene, Apries; and he was bound to satisfy his followers to some extent; but, seeing the value of the Greek mercenaries, though they were opposed to him, he could not afford to remain on bad terms with them. That the Greek trading in Egypt was a sore subject, and a state of affairs which the Egyptians bitterly resented, we may see plainly from the strong measures taken against Greek trading by Amasis, and the strict limitations by which it was bound. To gratify the Egyptian policy, therefore, Amasis destroyed the oldest Greek settlement and mart in Egypt, that in the east of the Delta, for as Herodotos says (ii. 154), "the docks for their ships, and the ruins of their buildings, were to be seen in my time in the places from which they were removed." At the same time, to avoid alienating the Greeks, and to secure them to his service, he took them to Memphis as his own body-guard. This stroke of policy gratified both parties, and at the same time strengthened the position of Amasis. Thus it came about that Naukratis was the only centre of Greek trade remaining, and stringent laws prevented any additional settlements or trading of Greeks in other places. "Amasis being partial to the Greeks, both bestowed other favours on various of the Greeks, and, moreover, gave the city of Naukratis for such as arrived in Egypt to dwell in . . . . Naukratis was anciently the only place of resort for merchants, and there was no other in Egypt: and if a man arrived at any other mouth of the Nile, he was obliged to swear 'that he had come there against his will;' and having taken such an oath, he must sail in the same ship to the Kanobic mouth; but if he should be prevented by contrary winds from doing so, he was forced to unload his goods, and carry them in barges round the Delta, until he reached Naukratis. So great were the privileges of Naukratis." (Herod. ii. 178, 179.) That this phrase, "anciently the only city of resort," refers to the days of Amasis we may well believe; first, because it would be in contradistinction to the liberty allowed under the foreign rule of the Persians, and in point of time it is much as we might now say "formerly the Americans were at war with England;" and also because Herodotos particularly mentions the docks of the colony in

the eastern Delta, showing that trade went on there, and says, "we Greeks have had such constant communication with them." A mere settlement of troops as Egyptian mercenaries would not need shipping; and if it had been a naval station for the Egyptian fleet Amasis would not have destroyed it.

10. During the reign of Amasis, Naukratis flourished on its monopoly of Greek trade; and being within a short distance of the capital, Sais, its advantages were natural as well as artificial. The Persian invasion, however, told seriously on the prosperity of the city. This is curiously evident in the proportion of the pottery which I have found there. In a perfectly impartial collection of pottery of all periods found in the town, there is fifty or a hundred times as much belonging to the century, or century and a half, before the Persian invasion, as to the century and a half of the Persian dynasty; a simple but clear proof of the falling off in the richness and importance of the city. The temples, however, seem to have been still standing in the days of Herodotos, 454 B.C., though not apparently in great renown, as he does not mention any special offerings dedicated in them, as he so often does in describing other temples. The archaic temple of Apollo then was still standing in 454, and yet the second temple of white marble was built about 440 B.C., according to its style. To what event we are to attribute the destruction of the first temple is not clear; if it could be placed as late as 400 B.C. we should see a most likely cause of the destruction of a Greek temple in the rebellion of the Egyptians against the Persians; and the favour to the Greeks shown by Amyrtæos and his successor Naifaurut (Nepherites) would encourage the Greeks to rebuild their sanctuaries. But such a date seems to be too late for the style of the fragments of this second temple.

From this time to the second Persian conquest, in 345, it is probable that Naukratis, though shorn of its original monopoly, was still a city of the first importance to the Greeks, as Sais was still one of the capitals, though it had lost its pre-eminence. The conquest by Artaxerxes would not perhaps disturb the west of the Delta so much as the east, and its duration was but twelve years. Under Alexander and the Greek predominance, a new life would be imparted to the Greek cities; but the foundation of Alexandria would naturally absorb this new vitality and gradually sap the strength of the older settlement.

11. Naukratis, however, shows an independence which never appeared before, in issuing an autonomous coinage about this time, and probably during the breach of government between the Macedonian and Ptolemaic lines, while Ptolemy Soter was governor of Egypt, 323 to 305 B.C. Two coins only of this period are known (see p. 66), found last May in our digging at Naukratis; bearing on one side the head of the city of Naukratis (?) with the inscription ΝΑΥ; and on the other, a head, apparently intended for the youthful Alexander, with ΑΛΕ, possibly standing for Alexandria. If it were a head of Alexander as king, he would be in the lion's skin, as on his coins, and have his title; whereas his head would naturally be the type, as being the hero, of his city of Alexandria.

Ptolemy Philadelphos, who so greatly enriched the cities of Egypt with monuments and public works, did not neglect Naukratis. He built a large structure of limestone, about 330 feet long, and sixty feet wide, to fill up the broken entrance to the Great Temenos; he strengthened the great block of chambers in the Temenos, and re-established them; and that the city flourished for some time after his reign, we may see by the quantity of imported amphoræ, of which the handles, stamped at Rhodes and other places, are found so abundantly. The number of Greek authors which the city produced during the Ptolemaic period also shows that leisure and study found a home there at that time. Philistus, Apollonius, Polycharmos, Charon, and Lykeas are known to us of the Ptolemaic age;

and Chairemon, Athenæus, and Julius Pollux, in the Roman period.

12. Under the empire the city, however, steadily decayed; the Great Temenos was finally ruined, the fine building of Ptolemy Philadelphos was entirely removed in the first century, stone by stone, for large houses then being erected on the mounds; the great block of chambers, the old store-house and fort of the early days, was half filled up, and used for dwelling-houses; and the city declined so much by the end of the second century, that it was hopeless to maintain its old schools, and Proklos, the last teacher, removed to Athens about 190 A.D. The removal cannot be placed much earlier, as Athenæus and Julius Pollux were probably at Naukratis thirty or forty years before this; and after Proklos removed to Athens, Philostratus was one of his pupils. As Philostratus was born about 172 A.D., this shows that Proklos was probably at Athens between 190 and 200 A.D. It is said, however, that he moved away from Naukratis in consequence of civil commotions; this seems most likely to refer to the Bucolic War in 175, and this would be quite a possible date, though rather earlier than we might have assigned from the age of Philostratus. Perhaps the ruin and decay of Naukratis, which seems rather sudden between 150 and 250, and the sudden cessation of all literary eminence there, just after producing three historical characters, should be referred to the city being ruined in the Bucolic War and the revolt of Cassius, and its suppression. That the city was still important in the middle of the second century, is shown by its being named in Ptolemy; and its presence in the Peutingerian map shows that it was not extinct for some time later; while the mention of it by Stephen of Byzantium, in the end of the fifth century, shows that it was at least not forgotten then. There are, however, no remains in the city which can be dated later than the middle of the third century; the common coins of Alexandria, under the later emperors, Probus and Aurelian, are scarcely ever found at Naukratis, and only one or two stray ones have appeared out of the abundance of the Constantine family. The common Byzantine weights, square with a cross, have not occurred among the large quantity obtained. And, in short, we may say that as a city it was extinct about the beginning of the third century, though a few houses lingered on here for perhaps a century or more later. A Coptic chapel was built on the top of the great mound apparently, as pieces of coloured fresco with a cross were found in digging there; and two lumps of plaster with cross devices also show that some Christians lived here. A Kufic glass stamp from a bottle, of about the eighth century, is the last trace of life that has left any remains in the place.

13. The present extent of the ruins may be seen from the plan (pl. xl.). The length of the mound is rather over half a mile, including the Great Temenos, and its width a little over a quarter of a mile. About a third of this area has been cleared out already by the Arabs, in digging for earth to lay on their fields, and thus the streets of the archaic Greek settlement are now exposed. This ground is heaped over with the broken pottery, which has been found and cast aside by the Arabs in their removal of about thirty feet of earth, the heaps being from a few inches to five or six feet in depth. This pottery, and the loose earth lying about, make it very troublesome to trace the original lines of the walls and streets; and the preparation of the street plan (pl. xli.) occupied all my spare time for some weeks. Often the determination of a single piece of wall would take half an hour of examination; and the bricks, being of native mud, cemented with mud, founded on mud, and then subject to a pressure of two tons to the square foot, continuously wet for two thousand years, are in many cases almost indistinguishable from the mud below and around them. Sometimes a cutting had to be left to dry for a few weeks; so as to detect, by the course of the cracks in it, where the brickwork ceased. The earliest foundations are now some ten feet below the present

surface of the country; hence so soon as the Arab diggings reach out to the cultivated land, the excavated site will be flooded by the inundation, and so form a permanent lake, which will for ever prevent anything more of early Greek times, or before the Ptolemaic period, being recovered in future. Some slight cause or whim on the part of the Arab diggers might easily occasion this any year. The highest part of the existing houses is twenty-nine feet, and the general mound surface about twelve feet, above the present plain. The modern huts on the mound are those of Bedawin, who have settled from time to time while camping on the ground. In the spring many families live here in the low Bedawi tents, and move off about April. The slag heaps marked on the plan are mounds of slag from limestone burning, eight or ten feet high, which adjoin large substructures of red baked Roman brick, some chambers of which show many successive coats of painted frescos. This slag is evidently the last state of the limestone, which the Romans had built their large houses with, when they stripped away the great limestone building of Ptolemy Philadelphos. Wherever a heap of slag is seen on an Egyptian mound, it shows that a great limestone building has existed at the place; it was thus that I was led to the site of the Ptolemaic temple at Tanis.

14. The present canal, which runs from the Barrage, and which is the representative of the ancient canal which led from Memphis, past the pyramids, lies at about five minutes' walk from the town, with cultivated fields between. That there was a navigable canal for sea-shipping up to Naukratis, the remains found here testify; a piece of thick pottery, with oyster-shells on it, was found in the early strata of the temenos of Apollo; and a piece of Roman brick, similarly incrusted, was picked up elsewhere in the town: though it might be alleged that they were brought for the sake of the oysters, yet that objection will not hold in the case of a piece of stone covered with small barnacles; such could only have been brought up as ballast from the sea. The great quantity of large fish-hooks, suitable for sea-fishing, which are found here, also point to this intercourse. The small size of the present canal must not therefore be considered any argument against its free navigation; and it is now larger than the continuation of it past the pyramids, which we know to have been navigable for shipping in the time of Herodotos. It must be remembered that the whole surface of the country has been raised by deposits about ten feet, and hence that the surface level of the old canal is now below the bottom level of the present canal. Hence no connection should be sought, either in size or exact position, between the two. That the ancient canal ran close by the side of the town we cannot doubt; the town, for commercial reasons, would be sure to adjoin the canal, and the canal at present makes a long curve to the west around the town, a straight line between two points on its present course skirting the side of the town. If this were the ancient course, a deflection of six inches washed off the wearing side, and deposited on the shoaling side each year, would suffice to bring the canal to where it now is. On digging at the border of the town, about west of the temenos of Apollo, we reached a thick bed of black mud, foul-smelling and offensive. This was probably some old dock or pond by the side of the ancient canal, filled up with sewage and refuse. Further pitting along this part may perhaps show us the old bed of the stream.

It may well be asked what inducement the Greeks had to settle in such a place, and why this spot was fixed on rather than any other. At the rise of the twenty-sixth dynasty, Sais was the capital, and hence the settlement in the east of the Delta, granted by Psamtik, was not the best place for trade. At the same time the jealousy of the Egyptians would hinder the Greeks from establishing themselves at the capital. We must remember what the object of the Greeks was at Naukratis; it was trade; and facilities for trade were therefore the first consideration. In this—as in all the internal economy of the country,

from Menes till now—the inundation is the great factor to be considered. During the time when the whole land is covered with water, no ordinary work can be carried on; the people are isolated in their mound-homes, a few feet above the surface of the turbid flood, and time hangs heavily on their hands. Then was the great opportunity for trading, the more so as the harvest had shortly before been gathered in, and its value realised, so that spare means as well as spare time were at disposal. That the Greeks did sail about from town to town during the inundation is evident from Herodotos. "When the Nile inundates the country the cities alone are seen above its surface, very like the islands in the Ægean Sea; for all the rest of Egypt becomes a sea, and the cities alone are above the surface. When this happens they navigate no longer by the channel of the river, but across the plain" (ii. 97). It was therefore essential to the Greek trade to be able to go to and from the mart, and to reach Memphis and the upper country, during the inundations; and this would be done with difficulty if they needed to navigate the broad, swollen, and rapid stream of the Nile in flood. To have the head-quarters of trade, to which the great ships would come, and from which the light, shallow trading-boats of the country would carry on the internal trade, situated on a tranquil canal, always accessible throughout the year, and free from the shifting mud-banks of the main river, was thus a prime consideration. And when we see that the place selected on this most advantageous canal, which reached the upper country without once opening into the Nile, was the nearest spot to the capital, Sais, we may well believe that the advantages of the site attracted the traders to this, rather than to any other spot of the Delta.

CHAPTER II.

THE TEMENÊ OF APOLLO AND OTHER DEITIES.

15. The earliest literary evidence that we possess concerning the Greek temples in Egypt, is the passage of Athenæus (xv. 18), which has been already mentioned, describing the existence of a temple of Aphrodite at Naukratis as early as 688 B.C. The next passage which bears on the subject is that of Herodotos (ii. 159), mentioning that Neqo, in 608 B.C., dedicated his corslet to the Milesian Apollo, in the mother temple of Branchidæ; showing that the Milesians had already familiarised the Egyptians with the worship of their great deity, and pointing therefore to the existence of a Milesian temple to Apollo in Egypt before that time. The last and most general evidence is that of Herodotos (ii. 178) which shows that at the latest the Greeks of Naukratis had in the time of Amasis, temples of Zeus, Hera, and Apollo, besides the sacred temenos of the Pan-Hellenion. But the passage does not exclude an earlier age for these foundations, before 570 B.C.

The site of the temenos and temple of Apollo at Naukratis is certainly ascertained, by the finding of hundreds of bowls dedicated to Apollo, alongside of the remains of two successive temples in a temenos. When I first went to Naukratis all that remained of this site for me to work on consisted of fragments of the temenos wall, not over five feet in the highest part, and less than a third of its whole circuit, and within its area an average of two or three feet of earth left on the basal mud of the country. The highest parts of the ground bore portions of pavements of the second temple, and contained fragments of both temples; and the trench in which the broken pottery from the archaic temple had been thrown had scarcely been disturbed. The temenos is about 140 feet wide and 260 feet long, and the temple appears to have stood about the middle of

it, and facing toward the west, as the rubbish is thrown out along the east of the temple. Thus the temple would face to the canal, which was probably considered the front of the town. The examination of the temenos was begun by a few diggings to find the depth of the heaps of late pottery which the Arabs had left behind from the upper earth which they had removed, and also to know how much earth remained beneath. Then, forming all the workmen in a line close to the west boundary of the temenos, a trench was cleared, and all the earth thrown up to the westward; when this trench was about ten or twelve feet wide, the earth from the east side was banked against the west, and so the trench was steadily moved eastward over the ground, turning over every fragment of artificial soil above the undisturbed Nile mud of the country. This order continued until reaching the point marked "wall" on pl. xli.; here, after I had left to pack up antiquities at San, the order was changed, and some small portions of the ground may not have been turned over from this point eastward. The "trench with bowls" was, however, probably cleared entirely. East of this trench scarcely a fragment of soil remains on the basal mud, all has been cleared away by the Arabs. The width of ground we cleared extended nearly up to the north wall, and to the supposed site of the south wall, and a trench was run all along the inside of the north wall to determine its form. No antiquities were found in this part. There is no way of working so satisfactory for an area of importance as turning over every ounce of soil and placing it on the ground already cleared; working with a straight trench across the site, wide enough to prevent any confusion, and to show the undisturbed native soil plainly at the bottom of it.

As the whole subject of the pottery dedicated in this temple will be found treated at length in Chapter III. with regard to its character and age, and in Chapter VII. with regard to the inscriptions incised on it, nothing will be said here concerning it. We will therefore consider in this chapter the history of the enclosure and its buildings.

16. As observed in the last chapter, the date of the foundation of the first temple to Apollo of the Milesians appears to have been about 620 B.C., or possibly earlier. Fragments of the columns of this temple are the largest portions that we possess, and they show by their small diameter that the temple cannot have been extensive; it is unlikely to have exceeded twenty-five feet in frontage and double that in length, and may, perhaps, have not been more than two-thirds of this size. It therefore occupied but a small part of the temenos. It cannot have covered well 2, as that is early; pottery of the sixth century (pl. vi. 2) was found there, and a watering-trough by the side of it, at the level of the sixth or seventh century. The stone well, 3, would probably be tolerably early, perhaps belonging to the second temple. If then the temple stood in the midst of the width of the temenos, it would not be more than about twenty-five feet wide. With regard to the length, the "wall" (pl. xli.) which belongs to the second temple was at the west boundary of a firm thick bed of limestone chips, which probably marked the basis of the second temple; and the "trench with bowls" must have lain outside of the temple. Thus the length could not exceed about thirty-six feet for the second temple, and probably for the first also. The ground was all so much broken up, that it was only in irregular patches here and there that any pavements could be traced.

The site of the temple seems to have been artificially raised at its first construction, on a mound of sandy earth; as beneath the pavement, fifteen inches thick, of limestone chips from the first temple, there was nothing found of an architectural nature in the five feet or so of muddy dust that covered the basal mud. It would seem most likely, therefore, that the temple was raised on a slight mound, otherwise the fragments would

not have been cleared away so completely before laying the foundation of the second temple. It is possible that all this five feet of earth was placed under the first temple to begin with, and intrinsically I should think this the most likely; only the considerations that it would raise it to an awkward height, and that the rubbish trench would hardly have been cut so deep behind it in that case, renders this idea less likely. We may, however, see an indication that the first temple stood as high as the later one, as a paving of slabs of limestone, each about three feet long by a foot wide, all broken and tilted up, was found on the northern side of the temple site, just below the thick pavement of chips of the second temple, and at about level 300 inches; and about fifteen feet south-west of this was a hard mud foundation laid at the same level, also below the chip pavement. These seem to show that the first temple must have stood nearly as high as the second temple; that the muddy sand five feet thick was an artificial mound on which the first temple stood; and that the thick bed of limestone chips at level 312 to 327, in which the fragments of the first temple were found, are just the smashings of the first temple *in situ*, bedded down and flattened to form the pavement for the second temple. The masonry of the first temple seems to have been partly executed a little way on the east of the "trench with bowls," as there were found quantities of limestone chips, much being burnt, mixed with charcoal, and sculptors' trial scraps. As this was all limestone, it probably belonged to the construction of the first, or limestone temple, and not the second, or marble temple.

The architecture of the first temple, so far as we can recover it, is shown in pl. iii. The fragments of the sculptured necking were found in the pavement of limestone chips made for the second temple. The base and volute were found by Arabs digging in the site, before I was aware of any temple existing there; and so first called my attention to what had seemed unpromising ground owing to the abundance of late Roman pottery, which covered it. The volute was smashed up and carried off before I could return with my camera, in spite of my offering to buy it; the base I secured a good photograph of, while the finder stood by, hammer in hand, waiting to smash it. Had I known that these were the last pieces of this building, I should have stretched my authority, and seized them by main force.

17. Of the other objects dedicated in this temple, beside pottery, some interesting examples were found. Many statuettes in limestone, about one to two feet high, have been placed here, but, strange to say, nothing but the legs and bases were found: of smaller figures a few were found, and one good one, which has only lost the feet (pl. ii.); this represents a worshipper coming with a libation bowl in his hand. Such seems to have generally been the motive of these votive statuettes, as we see in the case of the curious group (pl. ii.) of two figures (of the front one only a hand remains) offering a bull for sacrifice, ornamented with the *vitta;* by the hinder figure two vases are standing on the ground, one a large double-handled amphora of the early type, coloured red on the top to represent wine, and the other a nearly globular vase with a lid having a handle on the top of it, perhaps such as was used for corn. Another figure of a worshipper is more Egyptian in style; it is (pl. ii.) a seated figure, with a table of offerings in front of it, lying on which are represented four tall vases with covers, or possibly four fish. A piece of a larger statue was found, of about half life-size; it is of rude style, merely a rough hewn mass at the back, and smoothed into a rounded surface in front, with a sort of moulding running down the middle, representing the edge of the garment; a broad line of red runs down either side, like the streaks on amphoræ. At first I thought it might even be a piece of architectural work, but small statuettes of the same style re-assured me of its nature. These limestone figures are of the early part of the sixth century B.C., and form an intermediate link

between the earlier terra-cotta figures and the later glazed sandy-ware figurines. An earlier piece of limestone work is a large shallow oblong dish or pan of limestone, with handles at either end; this was found in the stratum AΠ 3, just below the statuettes above mentioned, and with the terra-cotta figures. These terra-cottas are always of females, ornamented with necklaces and head ornaments (pl. ii.). The most complete of these is at Bulak, the others in the British Museum. Another type of head has no ornament, but only a pointed hood (pl. ii.); this is the earliest of all the figures, as it was found in the lowest sand stratum of the trench, below the Polemarchos vase level, probably of the later part of the seventh century.

The later class of votive figures, belonging to about the middle of the sixth century, were of the light friable sandy-ware, glazed, in imitation of Egyptian work. The subjects, however, are seldom Egyptian, a figure of Ptah being all that could be mistaken for native art. The motive generally has reference to Apollo (pl. ii.), such as figures playing on the double pipes, or playing on the lyre, and especially the hawk figures, since the hawk was the solar bird in Egypt; (the hawks, however, have been found as early as the Polemarchos vase, and as late as the third century B.C.); less common are female figures, rams, bulls, and lions. With these was found a part of a bone figure, rudely cut, and with a broad red stripe down either side, like the largest of the stone figures.

18. Of the second temple we have rather more in the way of pavements, but even less in architecture, than of the first; and none of the waste pottery or other objects of it were obtainable, as all the earth later than the first temple was removed before the city was visited by me. Only one fragment of an offering has been recovered, a piece of an ostrich egg-shell (pl. xx. 15), with a pattern of a wreath etched out of the inside, and with the upper part stained red; the etching was probably done by drawing the wreath with wax on the shell, and then eating out the background with vinegar: it is distinctively eaten out, and not cut, scraped, or engraved; and the higher surface of the wreath was polished, like the rest of the inside, before etching. It is possible that the wreath was at first painted with some oily paint, and that the etching took place gradually and accidentally by the acidity of wine in the cup; but if so often containing wine the shell would probably be stained by it.

The second temple seems to have been largely of the finest white marble. Not a fragment of a column has, however, been found; and this would suggest that much of it might have been of limestone, with only marble decorations; but as the columns and architraves would be so adaptable to other buildings, it seems as likely an explanation that they were carried off whole in the later Roman period for some structure elsewhere. The style of the fragments of marble which have been recovered is very fine, the work being of the richest class; and it is the more interesting and intelligible to us, as it bears a resemblance to the details of the Erechtheion (see pl. xiv.). The fragments of mouldings are identical in many cases; and, though not so elaborate, the brilliancy of the work is akin to the later example. This is the more curious, as in the first temple there was the very unusual feature of a sculptured necking to the column, of which, perhaps, no actual example remains to us except the later one of the Erechtheion; and the pattern is derived from the lotus, in an archaic stage of what afterwards became the rich decoration seen on the necking of the Erechtheion columns. This unusual feature then of the earlier temple seems as if it had been familiar to the architects of the Erechtheion, in this or some fellow example; and the style of the second temple of Apollo suggests further that it was designed by the same architects, or those familiar with the same sources of ideas and work. There is, among other details, a curious twisted rope pattern, which, though different in arrange-

ment (running round the inside of a hollow curve), is the same motive as the twisted pattern next beneath the volute in the Erechtheion. As to the age of the second temple, we must place it not very far from the year 440 B.C. by its style; and hence it must have preceded the sculpturing of the Erechtheion.

Of the surroundings of the second temple some remains were found. As has been before said, it stood on a bed fifteen inches thick, composed of chips of the first temple, the surface of these (at level 327) being rammed flat and smoothed. On that stood a piece of brick wall, the bricks of which are the same size as those of the temenos wall (14 × 7); hence the temenos wall was probably built at the same time as the second temple. What material the walls of the temple were of, we cannot say; here was a piece of mud brick wall, and further east was a pier of mud brick which had been faced with stone. As all the houses were of black brick, very likely both the temples were of brick also, stuccoed over, and painted like the houses, and only the columns and ornaments were of stone. Three curious pieces of limestone, found in the temenos, bear on this question (pl. xviii. 7, 8, 9); they are pieces of deep, hollow, rosette ornaments; yet not moulds, as the details are in relief: the backs of the pieces, and the sides to near the front, are quite rough, evidently to be let into some structure, and the front edges are finished. They cannot have been to let into a stone wall, as then the back would have been square, to fit the stones; they must have therefore been for ornamenting a brick wall, and as the square would not be wished to show around the rosette, the back was round. Now where would they be inserted? At first I thought of the temenos wall, with a row of white stone rosettes let into the black brickwork at intervals of a few feet apart, with perhaps a string course of white stone above or below them, somewhat like a vase pattern; especially as I found a piece of an early vase with such a design in relief. On looking, however, at the decoration of the Erechtheion, we see just such rosettes around the doorway to the tetrastyle portico; in that case they are about half as large again as these, but appropriately so, as the building is much larger. It seems therefore not improbable that these rosettes were inlaid in the stuccoed black brick wall around the doorway of the temple; and they give some additional reason for supposing that the temple was built of stuccoed and painted brick, with marble decorations.

Besides the thick pavement of chips for the temple itself, at 327 level, there was a broad pavement found, remaining between the temple and the north-west corner of the temenos at about 310 level; this would belong to the second temple probably, as the ground at the date of the first temple was a good deal lower; and this is just about the level of the base of the temenos wall, which we have seen belongs most likely to the second temple. In the stuff of limestone chips thrown down to form this pavement, there were many thousands of alabaster drill cores from tubular drilling (see "Pyramids and Temples of Gizeh," first edition, p. 175) and fragments of parts of alabaster vases in course of manufacture. These drill cores evidently came from the drilling out of the centres of vases, in order to start the hollowing out of them by turning or otherwise; and the presence of such a quantity shows that the manufacture of these vases was carried on at Naukratis on a very large scale about 450 B.C., the waste from the turner's shop being afterwards brought to lay down as stone rubbish to form this pavement. Another piece of pavement of this age was found at about 330 level on the inner side of a piece of brick wall, forty inches thick, some way north of the stone well: the bricks were 14 × 7, like those of the other piece of wall on the thick pavement, and the temenos wall; but the pavement was of slabs of limestone. Pieces of hewn limestone were found about thirty-five to fifty-five inches over this, and small fragments of marble upon them; apparently remains of the second temple. Another piece of pavement, of

this period apparently, was found close on the north side of the stone well; it was made of irregular pieces of volcanic stone, laid close together, forming a generally flat surface; probably it was to stand on when drawing water at the well.

The localities of the stone would be valuable to ascertain, if it could be done exactly: the volcanic stone is from one of the Greek islands probably: the white marble is certainly Greek: and a far stranger stone is the very soft dark-green chlorite, containing brilliant crystals of magnetic iron ore; this is easily cut by the finger nail, and yet it has been carefully squared, and used in building. It is most like the Alpine variety, but may have come from Corsica.

Among small objects belonging to the second temple are many fragments of marble statues, unhappily so completely broken as to leave us often in doubt what part of the body they had come from. Also two small sun-dials, probably votive to the sun-god (pl. xviii. 5, 6).

19. The temenos of the Dioskouroi is even less easily traced than that of Apollo; part of the east wall is distinct enough, as the Arabs have dug away the buildings of mud brick on either side, leaving a bank of loose blown sandy earth coating the wall for a few feet thick; while the wall itself they have partly dug away, thus leaving a trench in the midst of a high ridge of sandy ground. This first called my attention to it, and fragments of a wall can still be traced on the southern side of the space; the northern side I could only conjecture by the ground being cleared entirely away to the basal mud in nearly a straight line with remains of walls and heaps of earth left on either side; it could hardly have joined the east wall squarely, looking to the houses traced on the outside of the wall. The west side is hard to understand; if the fragments be those of the wall, it was thinner than the others. Nearly all the area has been cleared out down to the basal mud; a few heaps left about the middle have yielded some pottery of the fourth or fifth century B.C.; and at the western side, fragments of painted and dedicated pottery were found, at several feet deep, in loose muddy sand. These dedications were all to the Dioskouroi (see pl. vi. 6 and pl. xxxiv), and by their number they conclusively show the purpose of this temenos. The only fragment of architecture found here was a chip of a column of fine, hard, white limestone (see pl. xxxv. 688); it is finely wrought on the face, and has the letters ΜΑ, preceded by a fragment of a letter which must be either Γ, Ε, Ζ, Ξ, Π, Σ (with horizontal top and base), or Τ. Now, this may be part of a name (such as ΠΟΛΕΜΑΡΧΟΣ), or it may be the usual dedicatory formula, such a person ΜΑΝΕΘΗΚΕ; and this uncertain letter would be the last one of the person's name: it is probably not Σ, as that would have been sloping at the age of this cutting, and we must look to some unusual name, such as ΘΩΡΗΞ. The date of this, by the style of it, is about the same as the second temple of Apollo, and very probably both the temples were reconstructed at the same time.

20. In the ground between the temenê of Apollo and the Dioskouroi not much has been left; and to the north of the wall of Apollo there are banks of rubbish, with ashes and bones. But rather on the west of this a piece of pottery, dedicated ΗΡΗΣ (pl. xxxv. 689), was found, and one or two other pieces, with the name of Hera, have appeared. It seems therefore as if the temenos of Hera had existed in this neighbourhood. Possibly we may find that it is to the west of this space.

The temenos of Aphrodite we may also guess the site of with some plausibility. In the pottery found in the scarab house was a piece of an early white-faced Naukratite bowl, with . ΦΡΟΔΙ . . . painted on it (pl. v. 37); not far from here was found a piece of a fine early bowl of large size, with a dedication to Aphrodite (pl. vi. 5, pl. xxxv. 700); and a piece of fretwork in limestone, apparently a band around a Doric column, comes from this corner of the town likewise. As Aphrodite was especially the Knidian goddess, we might rather

expect her temple to be Doric; just as that of Apollo of the Milesians was Ionic. Hence it seems more likely that we should find the temple of Aphrodite at the south-west corner of the cleared region of the town, than elsewhere.

Possibly another temple may lie in the uncleared part on the north-east of the town, as a bit of the rim of a bowl, inscribed . . . ΝΕΘΗΚΕ . . . was found at the edge of the cleared region here; it may, however, have wandered from the Apollo temple.

Of the temenos of Athena, whose priest, Heliodoros, was keeper of the city records, according to the decree of the city which I found, there are no traces yet known. The same may be said of the temenos of Zeus dedicated by the Aeginetans, since the dedications to the Theban Zeus refer probably to Zeus Ammon or Amun of Thebes, and not to a Greek divinity or a Greek temple.

CHAPTER III.

THE ARCHAIC POTTERY AND ITS CLASSIFICATION.

21. The pottery of the Apollo temple is so far separate from all other which has been found, being earlier than the bulk of ordinary Greek pottery, and is at the same time so far of value owing to its being relatively, and to some extent absolutely, dated, that it is best to describe it by itself as a single class. The following is a classification of the varieties of it (including a few varieties found in the town), judging more by material than by design. The letters refer to whole classes generally, judged by the body of the ware, and the numbers to subdivisions of those classes generally, judged by the superficial colouring and painting. Of course in a growing subject it is impossible to maintain a strictly regular system of reference in this way; some numbered classes might well rank as whole letter classes, and the order of the numbers is not the natural order of subdivision. Such a system, however, will serve for practical purposes of cataloguing at present, and may well last until some consistent and general scheme can be arranged, when we know more, and our information is not so likely to change its appearance. The type specimens, where such are distinct and remarkable, are entered in parenthesis; if dedicated, by the dedicator's name. All these are in the British Museum, excepting one.

ROUGH:—

A. Yellow-Brown:
- 1 white-faced.
- 2 brown-faced, and white-faced, red striped. Tall bowls.
- 3 brown-faced (varies to O^3). Jugs.

B. Red-Brown:
- 1 black stripes (earliest pottery from well, retrograde inscriptions).
- 2 fine-faced, with Indian-red geometrical and lotus. Dishes.
- 3 faced with drab and brown, lotus, &c. (ΕΡΜΑΓΟΡΗΣ, Bulak).
- 4 rough plain.
- 5 coarse.
- 6 very coarse red, white face.

C. Brown:
- 1 hardish plain (label with two holes).
- 2 hardish, faced smooth. Statuettes, &c.
- 3 hardish, painted brown (aryballos).
- 4 white-faced, brown, black and applied red pattern, either animals (ΠΡΩΤΑΡΧΟΣ), guilloche, or crescent pattern, doubled.
- 5 thick, light brown, plain.

HARD BROWN:—

D. Light Drab Face:
- 1 yellow-brown and applied red, lotus, chequer, guilloche, &c.
- 2 brown, lotus, &c.
- 3 black animals and lotus, applied red; red and white line inside.
- 4 black fret and bands outside, or brown-black bands.
- 5 plain.

Δ. No Colouring:
Hard, varies to C^2 or to G^4 if lined.

E. Thin, Polished Red Face:
Often with pinched-up necks, and wheel-pattern handle-knobs.

F. White-Faced: (Patterns in pl. v.)
- 1 thin red lines and figures. Tall bowls. (pl. x. 1, 3.)
- 2 orange lines and figures.
- 3 black figures with applied red.
- 4 brown figures with applied red.
- 5 black inside, white and red applied. Lotus.
- 6 dark drab inside, brown lines out.
- 7 finest, later, with fine black outline design.
- 8 thick, black and applied red, coarse (wolf and man, large vase, non-Naukratian).
- 9 brown lines outside.
- 10 hard, smooth, red and brown geometrical.
- 11 brown inside, plain out.
- 12 red inside, plain out.

G. Smooth Unfaced:
- 1 scarlet or brown pattern, red and white line. (pl. x. 11.) (Eye bowls and bird bowls).
- 2 brown to red line; black inside, with red and white lines. (Eye bowls).
- 3 incised pattern.
- 4 thick dishes, red bands, upright rim.
- 5 brown band outside and in.
- 6 light brown, brown bands. Jug.
- 7 hard red-brown, brown band.

H. Ribbed Flat Dishes:
- 1 generally painted inside; hard fine pottery.
- 2 white-faced inside, with animals and spots.

INTERMEDIATE:—

J. Pinakes: buff-brown, geometrical and lotus.
- 1 brown-black, red and white line.
- 2 scarlet.
- 3 black and crimson.
- 4 orangy-brown.

K. Black Jugs:
- 1 pinched-up necks, plain, thin.
- 2 square buff panel, animals; applied red. (pl. vi. 1, 2.)
- 3 black figures and crimson. Pottery of Amasis.

BUFF:—

L. And Black:
- 1 bowls, plain. (Pl. x. 4, 5, 6.)
- 2 bowls, with red lines.
- 3 with crimson, white-faced, incised. (Large bowl. Pls. viii., ix.)

M. And Black, Figured:
- 1 incised figures (ordinary black figure ware).
- 2 incised figures and applied red.

N. And Black, turning Brown:
- thick (ΦΑΝΗΣ).

O. Softer:
- 1 plain (ΠΑΡΑΜΕΝΟΝ). (Pl. iv. 1.)
- 2 with scarlet figures, geometrical (ΠΟΛΕΜΑΡΧΟΣ). (Pl. iv. 3.)
- 3 with scarlet figures, soft. (Little jug, dish (pl. x. 8), and bowls.)
- 4 with scarlet figures, smoothed (boar dish, vases with circles and rays).
- 5 red variation of 1 and 2.
- 6 brown pattern, thick, and harder.
- 7 brown lines, bowls, angular rims.

DRAB:—

P. Coarse Thick:
- Dishes (pl. iv. 2) and massive amphoræ, loop handles. (Pl. xvii.)

Q. Light:
- 1 thick, jugs.
- 2 thin, black stripe (Π̄ cup).
- 3 brown spots (hedgehog and vases).
- 4 red lines.
- 5 black out, red and white lines.
- 6 dish, brown bands, rectangular rim.
- 7 yellow-brown spots and feathers (bird vases).

R. Figured Incised:
- 1 red and black figures, incised.
- 2 brown and applied red, incised, lotus.

S. Hard:
- 1 red stripe (tall, wide-necked, small vases).
- 2 red and black animals and harpies, incised. (ΔΙΟΣΚΟΡΟΙΣΙ). (Pl. vi. 6.)

T. Stem Dishes:
- Red and black lotus, and geometrical.

U. "Phoenician Greek:"
- 1 red and black animals, and geometrical; inside red and white pattern (pl. vii. 8), on red (ΧΑΡΙΔΙΩΝ) (pl. vii. 9), or on black (ΤΑΦΡΟ . . . . pl. vi. 5.)
- 2 coarser and greyer in colour.

GREY:—

V. Greyish Drab:
- 1 red-brown inside, softish, bowls. (ΣΛΗΥΗΣ.)
- 2 black in, with red line.

W. General:
- 1 thin fine (vase, lotus handle in relief).
- 2 massive, smoothed, also drab (tripod cups, and aryballi with warriors in bistre).
- 3 thick, blackish; lighter than Roman grey.
- 4 grey-brown, black and white pattern, elementary fret; thick, square edge.

BROWN :—

X. NON-NAUKRATIAN :

1 dark brown outside, angular rim (pl. x. 10.) (Melian).

2 red-brown figures, white flesh, &c. (Island pottery).

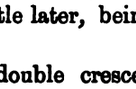
22. Referring to the periods of the different classes by the levels at which they are found in the rubbish trench of the temenos (which are not correlative to the levels in the town, owing to the depth of the trench at first), we call the lowest bottom of the trench 220 inches level, and the highest pottery-bearing ground that we cleared in the temenos 330 inches level, the levels starting from an arbitrary datum below every point to which we can refer, including the bottom of the early wells. Roughly speaking, I should suppose level 220 is of about 650 B.C., 250 of 600 B.C., 285 of 550 B.C., and 330 of 520 B.C. The data for such an estimate are that the town and temple was probably founded in the reign of Psamtik I., judging by the history of the site in general and the earliness of some of the dedicated pottery; that the Polemarchos vase can hardly be put later than 600 B.C.; that the terra-cotta archaic heads are not likely to be as late as 550 B.C.; that the glazed figures are akin to those of the scarab factory destroyed in 570, and hence are not later than about 550 B.C.; that the Phanes vase is about 530 B.C.; and that the brilliant incised ware with black figures on a buff ground is far from being the latest black figured, and would not be likely to be after the Persian conquest 520 B.C.; and as nothing later than that is found, it probably closes the series of dedications in the troubles of the Persian war. Having these probable indications, which are in good general agreement with the intervals of the strata, we can hardly do wrong in accepting the scale indicated above.

We will now note each class which we can limit to any particular age, and those that are remarkable in themselves :—

A 3. The rough yellow-brown jugs, made thin, with pinched necks, and a brown wash over the outside, are early, being found twice at 230, and once at 240.

B 5. The coarse red-brown pottery is very early, being found often at 220; and this just agrees in date with finding the same sort of very coarse pottery of dull red in the burnt stratum of the oldest town, which I should also put to about 650 B.C.

B 6. The very coarse red, with a soft thick coat of white on it, is a little later, being only found at 230 and 240.

C 4, with the double crescent pattern  is later, coming at 290.

C 5. This thick light brown is early, being at 230 and 240.

D 1 is rough pottery, washed over yellowish, and with patterns of lines, not swelling thick and thin, but uniformly rather coarse. This seems like the natural successor of the rough red white-washed. It is at 250.

D 4, black fret and bands, is at 285 level.

D 5, plain, is found up to 250.

Δ. The plain hard ware is early, all being at 230.

F. The Naukratian ware of thin brown, with a hard, glazy, fragile, scaly coat of white clay, is found at all levels from 230 upwards to 310; generally the plainer varieties are earlier, and the patterned later. F 3, 7 and 8, have not been found in levelled strata, however. The typical shape is a bowl with a long conical rim, as high as the whole of the rest of the bowl. (Pl. x. 1 and 3).

G 1, 2. This class is most characteristically to be known as eye bowls, as no other pottery (except one scrap of black and buff brilliant incised) have eyes as a pattern. These bowls, however, have eyes on them only in the later examples, and then always two eyes. The best characteristic is the absence of any rim, the bowl simply coming up to a thin edge in one curve from the base. (Pl. x. 11.) The range of these bowls is just that of the class F, but the eye-pattern never appears till level 310, or perhaps 530 B.C. The inside is sometimes only coloured with bands; sometimes it is all black (or brown, or scarlet, according to the oxidation in baking) with the characteristic Naukratian lines—a thin red line, bordered by a white line on each side.

G 4 to 7 are generally early, of 230 level.

J. The pinakes (stem-dishes) are generally early, about 230 to 260.

K 2. The painted black jugs (pl. vi. 1, 2) are not so early, the levelled pieces being at 285 and 290, or about 540 B.C. This accords with the style of them, as this design, of slightly later style, is found at Naukratis in exactly the style of the potter Amasis. This would date them to about 540, or later; and the

lettering and form of dedication on pl. vi. 1, is exactly the same as on the inscription of Phanes, which would place them to about 540 to 530 B.C. Hence we see the three data—of general stratum levels, of the Amasis style, and of the Phanes inscription—all agreeing quite as closely as the date of any of them are known, within ten years.

L 1. This, which is the commonest of all Naukratian pottery (pl. x. 4, 5, 6), is found at all levels, from 230 to 310. The earlier varieties (about 620 B.C.) are, however, rougher on the face, and browner, not quite so clear a buff; just above this they are rather soft, but from about 285 to 310 level, they are fine and abundant. The greater part of the dedications are cut on these bowls, and there is a curious difference in the general formula, according as the fashion prevailed of incising on the black body, on the buff band, or on the buff rim.

L 2 is the same, with two or three very narrow red lines, inside or outside. One case occurs at the same level (290) of a bowl with applied figures (a knucklebone) and red spots.

L 3 is only known in one case—the large bowl (pls. viii., ix.)

M is late in the series, not occurring till the top level of 330.

N occurs at 285 and 290.

O 2. Polemarchos vase, was found lying on the bed of sand at 230, and that style does not occur higher than 250.

O 3. The softer kind, however, goes as far as 320.

O 5. The redder variety is the earliest, 220 and 225.

P. The massive drab pottery, both dishes and amphorae, is early in general, occurring at 230, and the bowls being always dedicated with very coarse large letters, and often retrograde. The amphorae are often, perhaps usually, scraped down the outside; the large loop handles (pl. xvii.) are found from 230 to as late as 320 level. They are never stamped with potters' marks, but often have cuts across them to mark ownership.

Q 1 to 4. The light drab ware is generally rather late, being nearly all from 270 to 290 level.

S 2. The figured drab ware (pl. vi. 6, example from temenos of Dioskouroi), is found at 290 to 330, which would place it about the end of the reign of Amasis.

T. The pinakes (stem-dishes) of the Kamiros style are very commonly found in the town; those fragments levelled in the temple are from 230 to 290.

U 1. The "Phoenician-Greek" figured pottery, as it has been called for lack of an accurate name, is found in just the same range of level as the pinakes corresponding to the earlier half of the sixth century B.C. One of the finest examples (pl. vi. 3), which is painted inside (pl. vii. 8) with red and thick white on a black ground, was found at the Polemarchos level 240, about 600 B.C. We have so little pottery from the small deposits of older levels in the Apollo temple, that we cannot conclude that such pottery is not earlier; in fact, being thrown away at this period, would not prevent our supposing it to have been made well into the seventh century.

U 2. The coarser and greyer variety is found later at 285 level, and hence we should consider this ware as tending to degrade. And further we have no example of this pottery varying in degree into the later painted ware.

V. The grey-drab ware is soft; it is common in the form of small bowls, generally painted with red or brown lines. They range from 230 to 290 level. The usual form is pl. x. 12.

W 3. The thick grey ware is also found from 230 to 310 level.

X. The brown bowls (type pl. x. 10) have been found at 250 level, which would place the Melian inscriptions, which occur on such, and on no other pottery, to the earlier part of the sixth century.

We may hope that in clearing other sites of temples, where we shall start on undisturbed ground, with a clear idea of what is likely to be found, and how to maintain the continuous record of all that is discovered, we may be able to obtain a more thorough and complete classification of the age of archaic pottery. The above will at least give some fresh and useful data for this subject.

23. Turning now to the levels of the pottery found in the town, these must not be correlated with the pottery of the Apollo temple, since that was deposited in a trench dug on purpose, and accumulated quicker than the general rubbish of the town. The levels in the town are also somewhat varying in age, since certain parts of the town were earlier inhabited than others, and different parts had different rates of growth. Where, however, no specific cause of variation (such as the banks of potters' waste) can be observed, the levels appear to be remarkably

equivalent in age in different places. Hence, though the main value of lists of pottery from different sites is from their showing us what pottery was contemporary by being found together, yet some value may be attached to the absolute levels connected with different sites. As before mentioned, all levels start from an arbitrary datum, which is below any point that we need to notice: the details of levels in general will be found in Chap. X.

The general starting level of the town is about level 300 inches, in all parts, and this probably corresponds to about 650 on to 600 B.C., according to the time when different parts of the town were occupied. We must here notice the different strata which have been examined, in the order of their levels, leaving the more or less doubtful question of their precedence in time to be considered apart.

The deepest strata examined were at the north-east of the cleared streets, at the east of the south wall of the temenos of Apollo (see pl. xli.); this bed of broken pottery, &c., was from 280 to 310 level; the types were B^6, finer than type, with a yellow-white wash; C^4 (bands of dark bistre on drabby-white ground); Δ a dish, smooth faced, broad flat rim, and close ribbed circles underneath, (like that inscribed ΚΛΕΨ in Apollo); D^4; F^2; F^5; F^{11}; F^{12}; G^2; J^3; several of L^1 bowls, kylix stem, and deep curved bowl without a sharp rim; L^2; P, amphora; Q^1, thin jug; W^3, jug; and white faced amphoræ with red and with brown lines; also a 'pilgrim bottle' made on a bag; and a 'pilgrim bottle' of green glazed ware.

A very similar deposit was found a short way N.N.E. of this; types F^{11}; J^3; L^1 (much); and L^2, along with the foot of a good blue glazed *shabti*, with inscription, of the style of the twenty-sixth dynasty.

We have many beds of pottery worked in at about this same level in different regions. In the neighbourhood of the Apollo temenos a lamp of the central tube type was found, along with pottery B^5; B^6 (worked into a draughtman); F^{11}; G^2; Q^2; R^1 (small aryballos with warriors in red); and W^3 thin and polished. Also a draughtman made of white faced amphora. Judging by the lamp, we should place this as equivalent to stratum ΑΠ 4 of the Apollo trench.

Also low in the north half of the town there was found together pottery of B^6 (finer than the type, a wash of yellow-white on the face); C^4; Δ, fine and smooth, a dish; E, with brown face and red lotus pattern; F^8, a cup; F^9; G^2; L^1, with high rim; and W^4.

Another deposit of about the same level, also in the north half, contained B^5, with a white stripe; D^2, fret pattern; F, white and orange inside and out, a flat bowl; F^9 (much); G^2; J^1; L^1; L^2, bowl with wavy handle ∪∪.

In the south part of the town the occupation seems to be older than in the north part; the oldest stratum is all burnt, and this burnt layer, black with charcoal, is not found continued in the north part. Again, the pottery of the 300 level seems rather older than the same level pottery in the north part. The large amphora of brown pottery, with red lines and a white ↑, (pl. xvi. 4), was found in this burnt earth; also very coarse, thick, red pottery, of which the cover of a large pan has been brought over; large thick drab pottery (P) amphoræ; and white-faced amphoræ with red lines. Also a fine thin hard brown vase, with black face (burnt red in the conflagration), a red stripe between white stripes on the belly, and with incised tabs or long leaves from the neck on to the shoulder, the alternate tabs painted with thick applied white. This earliest charred stratum I should suppose to be about the middle of the seventh century B.C.

At about 320 level, perhaps half a century later than the preceding pottery, there was found part of a globular vase (32), with a harpy or sphinx incised, of Assyrianesque type, wearing a tiara; near this (on the south side of the path), C^4, lion and stag; F^{11}; G^1; and L^1.

At the same level a bowl of thickish drab (P), with a short vertical brim; and on the north side

of the path, at about this level, B^5; G^2; L^1 (brownish); P, amphora, large, thick, scraped down on outside; and W^3. At this level, or a few inches higher, the fine kylix with Ulysses tied on beneath the ram, now in the British Museum; it is of L^1 with black figures and applied red.

At 335 occurred the scarab stratum, in the site marked *Scarabs* on pl. xli., in the south-west part of the town. This bed had been mostly cut away before I came to Naukratis, and what was left was but scanty. Some good fragments of pottery were recovered along with the scarabaei and moulds in this stratum. The varieties are B^2; B^3; C^2, with brown spots; C^4, fine-faced, with lotus and honeysuckle, and row of crescents in brown-orange, and hard with pattern of Polemarchos vase neck, (pl vi. 3); Δ, incised wet, and 'pilgrim bottle' made on a bag; D^4; D^5, smooth; E; F^1; F^2, both fine and thick; F^3 thick; F^4; much of F^5; F^6; F^8; F^9; also a terra-cotta solid bust of F^2; G^2; G^5, a fine pottery lamp, open dish type, with small spout; J^4; K^1, black, lustrous, thick; L^1, greyish, lustrous, and foot of kylix; N, brownish, chequers on edge; O^6, chequers; P, large amphoræ, scraped down; S^2, swan or harpy; T, and with animal figure in dish, and red and white lines; W^2, white faced. The other classes of objects found in this house are described in Chapter V. The age of the close of this deposit can be safely fixed at about 570 B.C., and hence the pottery and other objects probably range from that year back to about 600 B.C.

At about the same level, or 340, a little way south of the scarab factory, some pottery was taken from a road, just below the level at which the custom of mending roads with limestone dust was begun. This pottery is of the types B^4, with rouge-red facing polished, jug; G^2; L^1, and kylix base; O^2; Q^1; S^1, brownish; W^3, like the large black amphora (pl. xvi. 6), which is like certain pottery of the Polledrara tomb; and white-faced amphora with red stripes. Chipped pottery draughtmen were also found.

A few inches higher a deposit of pottery at the middle of the east side of the cleared area (about the lower word *Iron* on pl. xli.), at level 345, contained more B^5 with rouge-red facing, polished, a flat cup and a small neckless vase; a little drab aryballos, and M^2 base of a bowl with gorgon's head, which type is very common at Naukratis. A bronze weight filled with lead, and a soft yellow paste eye and bead covered with blue wash, were also found here.

In the potters' rubbish in the north-east of the town at 350 level were found B^5 whorls; Δ, a fine-ribbed dish, smooth-faced; F^2, and same thicker; G^2; L^1.

At 360 to 400 a road was cleared about 200 feet north of the scarab factory; this contained B^4 rouge-red facing; C^3 dishes with flat brim, and of thick bowl type; C^4; Δ amphora neck of type (pl. xvii. 22), and also with black lines, circles, &c.; F^6; F^{12}; G^1; J^3; L^1; P thickish drab bowl with short vertical brim (like that of 320 level); Q^1; Q^4 aryballos; W^3.

At the same level, or 370, on the middle of the east side of the town, was found a curious dish of B^5; a small flat pan with a circular cup in the middle and the space outside of the cup divided into two parts by walls connecting the cup and the side of the pan. Other such dishes were found divided into three segments beside the cup.

Some way higher, at about 420 level, a quantity of pottery was taken from the bands of road-mending formed of limestone dust on the south-west of the town, a little south of the scarab factory. This was of C^4; E with brown face and red lines, a pivot lamp, and therefore probably after the central tube lamps by its form, as we see it to be by its level; F^8, brown, animals, &c., incised; F^{11}; L^2; together with rude stone figures of birds with hinging heads, the heads now lost and only the joint showing at the neck; a piece of alabaster from a vase-maker's; and an extremely rough recumbent female figure. From about this level to 450, road-mending on the west of the town, also yielded B^5 (?); F^6; L^1 and L^2.

Finally, road-mending on the east of the town,

at about 450, contained B^5 ring-stand, dish, &c., rouge-red facing; B^6 finer; D^3; D^5; Δ fine-ribbed dishes; G^3; L^1 (and painted; P, dish, small spout, and a conical bottom of a vase; T; W^3, and coarse imitation of black amphoræ (pl. xvi. 6); white-faced amphoræ with red and with black lines; and chipped pottery draughtmen. At higher levels scarcely anything has been noted, as a large and special section cutting was begun at a high point in order to supply varieties of every period; unfortunately, other and more necessary work prevented that being finished, and I hope it may be done this coming season; every intelligible fragment of pottery found so far in the cutting has been exactly levelled and marked.

Looking now to the classes of pottery, we may note some points. B^5 with the rouge-red facing, more or less polished, is a later type; it does not appear below 340 level, and it continues above 450, as one vase of it was levelled at 480. The Δ dishes, thickish, very finely smoothed, and with many close ribs on the underside, are widely distributed from the earliest levels to 450. The white-faced F pottery has its most flourishing period at the scarab house, 335 level; but such a variety was found there that it becomes a question whether there may not have been a shop for pottery painting there, as there was for scarabs and glazed ware. We see, however, that it is in the corresponding later levels of the Apollo trench that this class is most varied and abundant. The G^3 bowls are found at all levels, apparently up to 450, as extensively as the fellow type L^1, which always accompanies them. L^2 is found very early in the town, whereas there is none fixed until later times from the temple. The great amphoræ of of thick greenish-drab ware, with massive loop handles, and often made by hand, being scraped down on the outside, are apparantly not found above the level of the scarab factory, or 570 B.C. They are so common, and at the same time I watched so continually for them in digging in order to settle their age, that this seems probably a real limit; and if so, it is valuable for fixing other dates. The great drab bowls of similar style are evidently early, as the inscriptions on them are very rude, and always retrograde if on the inside, while direct on the outside. The handles of the great amphoræ again never have any stamps on them; their markings are generally rude cross cuts, and very rough and unintelligible attempts of names (see pl. xxxv.). The thick dark-grey pottery is found at all levels, but the fragments of amphoræ, like that of pl. xvi. 6, are not the earliest, occurring at 340, and an evidently coarser and later form at 450. The coarse black-grey pottery of Roman times must not be confounded with this; it is generally more of a blue-black, soft and ashy-looking, and with a coarser grain. The white-faced amphoræ with red orange or brown stripes around the neck, down the handles, and about the body, are very common, and seem to belong to the whole of the archaic period, up to the 450 level. The little 'pilgrim-bottles' moulded on a bag of sand or chaff, and showing the cast of the bag inside them, have only been found in early pottery of the scarab factory, and older; so they may be roughly dated at 600 B.C. More complete diggings in less disturbed parts of the mound, and with a previous knowledge of the general ages of the pottery, and what special questions need to be settled, starting from our present information on the subject, may, we hope, clear up much more of the history of the ordinary pottery of the archaic period at Naukratis.

CHAPTER IV.

THE GREAT TEMENOS.

24. That the Great Temenos (pls. xl. and xlii.), which is larger than all the other temenê of the town put together, and equal to a third of the city in area, is "the greatest of all these temenê, which is also the most celebrated and the most frequented (or conspicuous), called the Hellenion," as Herodotos says (ii. 178), can scarcely be

doubted. We have here in this immense enclosure the heart of the Greek race in Egypt; what was for the Greek colony the parallel to the Panionion, the heart of the Ionic states of Asia Minor.

As a place of assembly for deliberation on matters of public welfare it would readily hold fifty or sixty thousand men; and as a fortified place, its wall of fifty feet thick of solid brickwork, rising to some forty feet from the ground, would secure it from attack. It was the great sanctuary, the common ground of the principal tribes of the race, the civil centre of authority, and the rallying point in danger: as important to the Greeks of Egypt as the Panionion or Olympia was to those of the northern countries. The share in the privileges of the founder-states was jealously preserved, as Herodotos says, "the Hellenion was founded in common by the following cities: of the Ionians, Chios, Teos, Phokaia, and Klazomenai; of the Dorians, Rhodos, Knidos, Halikarnessos and Phaselis; and of the Aiolians, Mitylene alone. So that this temenos belongs to them, and it is these cities that appoint officers to preside over the emporium; and whatever other cities claim a share in it, claim what does not belong to them" (ii. 178).

25. This great structure, the joint labour of nine of the principal cities of Asia Minor, lies at the southern end of the city of Naukratis. Its dimensions inside the wall are: north and south sides, 870 and 851 English feet; east and west sides, 746 and 742 feet. The thickness of the wall appears to vary from 38 to 62 feet, but is generally about 50 feet. The height of the wall, where a portion had been less destroyed then elsewhere, is still 29 feet, and was probably about 40 feet originally, or perhaps more. There was but one entrance, and that in the middle of the western side originally. At present the whole of the wall, excepting a part of the southern side near the south-west corner, has been cut away by the Arabs down to the present ground level, thus leaving only five or ten feet of it in different parts. The higher part remaining is protected by an Arab cemetery in the south-west corner, and houses built against the outside of it; and I was told that the whole of it was about thirty years ago as high as this part.

Within the enclosure, and coeval with it, were two great buildings; one now destroyed, the other in course of destruction. The destroyed building was not like that marked on the plan, but contained passages and rooms, with entrance on the ground-floor, "like a house in Cairo," as one of the men said. It lay between the remaining building and the entrance; and now is marked by a low mound, with huts and tents on a part of it. Perhaps the plan of it might be recovered in future, but our digging there was not intelligible or satisfactory.

26. The other building, which we commonly named the Great Mound, is a mass of brickwork with chambers and passages in it (pl. xliii.), which had no entry or communication on the ground-floor, but formed a system of cells, each only accessible at the height of seventeen feet from the ground. The outside of this building originally was 180 feet wide on north and south, and 179 feet on east and 177 on the west side; additional walls were added in later times. Its height, after the whole of the chambers had been filled up with the broken and fallen walls, and after sixteen hundred years of denudation, was still thirty-three feet; and as the filled chambers occupy about the same area as the walls which had broken down and filled them, we cannot err in assigning at least fifty feet as the original height, probably sixty or seventy would be nearer the truth.

The arrangement of the whole will be seen on referring to the plan. Leaving aside later alterations, the original form was apparently intended to be a square block of building containing twenty-six chambers, connected by passages opening from a main passage down the middle; these chambers and passages being floored with wood, at a level of seventeen or eighteen above the ground; leaving

cellars of this depth below each chamber, and below the passages, without any communication with each other. Above this first floor the building had probably at least a second and third floor below the roof. The middle passage is evidently the main one, both by its position and size; but as it is destroyed at both ends down to below the first-floor level, at which all the entrances were, we cannot now say for certain where the entrance door was: we may presume, however, that the door would probably face into the body of the temenos; and, agreeing to this, we see that on each side of such an entrance are two small chambers provided, different to the arrangement of the other side of the building, and to which no passage would lead except the main passage. These chambers would be, therefore, in a suitable position for the door-keepers' and custodians' rooms. On this floor, at each branching of the cross passages from the main passage, and at each entrance to a chamber, there was a stone doorway built in the passage, the backing of the stones being visible in each remaining entrance against the mud-brick walling.

These doorways of stone would hardly have been inserted without an object, and we can scarcely doubt but that wooden doors were fitted in them.

27. What then was the object of such a building? Such a large number of deep cellars would not be needed except for storage; and we may be tolerably certain that one purpose of this structure was the custody of the stores belonging to the Pan-Hellenion, and the more valuable wares of the emporium, which was under the control of the officers appointed by the Hellenic league. But the remarkable feature of there being no entrance lower than eighteen feet from the ground into any of the chambers, is not required for such a storehouse; no doubt it rendered it safer from theft, but the absence of any raised approach to the doorway shows that the idea was to resist the main force of besiegers, and not the petty violence of thieves. When we see the enormous strength of the Great Temenos in which this building stands, the utility of these structures in warfare is beyond doubt. Further, we may observe how admirable such a construction would be for defence; if an enemy began to mine the wall, which was sixteen feet thick, he would at last on getting through it find himself in the bottom of a well, from which the besieged would have had ample time and notice to remove all means of communication. To mount a wall eighteen feet high to a doorway, in the face of opponents above, would be impossible; or even the floors above might be taken out, and the doors fastened, so that the defenders could hurl down stones from a height of fifty feet or more on the enemy. It was simply impregnable to direct attack, and never has been breached in this way. The regular entrance to the building, at a height of eighteen feet, was evidently approached by a wooden scaffolding that could be removed; the outside wall at both ends of the main passage is smooth and continuous, and shows no trace of an approach of a permanent nature.

At the level of the doorways there is around all the chambers a ledge or recessing of the brickwork about five inches wide, leaving the wall above that ten inches thinner in consequence. A similar ledge runs around the chambers at thirty-five to forty-one inches lower level; so that the walls are reduced fifteen or twenty inches. This upper ledge seems most likely to have been intended to support a floor of planks laid across the chamber; as the chambers are about thirteen feet wide, such a flooring would be quite practicable. Such a ledge may seem rather narrow, but the weight would be equally distributed along it by all the planks resting on it; and it could not be wider than this if each of the upper floors took off part of the thickness of the wall for their support. The reason against having fixed beams, such as we see the signs of in Egyptian houses, was probably in order to be able to take away all the flooring and leave no point for an invader to cling to.

We have a curious illustration of the appearance of this building in a fragment of a limestone model of a structure which was found at Naukratis (see pl. xvii. 1); this represents a building of mud-bricks, having windows in an upper storey, but no openings below; the absence of lower windows being shown by the insertion of narrow horizontal ventilating slits, just such as the Egyptians made in all ages. It is also noticeable that this building has a large batter in the wall up to the window level, and the chambered building has just such a batter in its outer wall, made by raising the foundation of the corner, as will be seen in the level at the north-west corner, where there is a rise of twenty-two inches. It seems very probable that this fragment is a part of a limestone box, carved in imitation of the great store-house and fort of the town.

28. Having now described the first condition of the Great Temenos and its buildings, we will note their subsequent history. At some period between the defeat of Apries (570 B.C.) and the second Persian conquest (345 B.C.), most likely at the latter time, the entrance to the temenos was ruined, and the wall apparently broken away for some distance. We are justified in supposing that the original entrance was narrow, only a single gateway in the wall, by observing the strength of the wall; to build such a massive wall, and then leave a large part of it filled with a comparatively weak building, is not supposeable; the original defensive gateway would be as narrow as possible. The wall then being thus ruined when Ptolemy Philadelphos came into power, he re-established the temenos by completing its wall again, and added a large public building to the city at the same time, by filling the gap at the entrance with his new structure. The form of this will be seen in pl. xlii. That this structure and the temenos were not built together may be seen by two facts: first, the bricks of the whole temenos and of the great mound of chambers are 16·3 × 8·3, the same as those of the twenty-sixth dynasty at Kom Afrin; whereas those of the Ptolemaic gateway are 14·8 × 7·2, rather less than those of the thirtieth dynasty at Saft-el-Henneh; secondly, the great wall is irregularly broken away askew at the south side of the gateway, and a filling-in was placed between this broken part and the stone lining of the Ptolemaic building. The lop-sided placing of this building in the west side of the temenos suggests also that it was an addition patched in, and not an original feature.

On referring to the plan it will be seen that there is a thick brick wall (marked full black), and on either side of it was a coating of blocks of limestone, the position of which is shown by the dotted lines. We must now give the authorities for such a restoration. In the first place it should be said that this brick wall is *continuous*, and not broken across in the middle for the roadway; the road went *over* the level of what now remains; but as there must have been an entrance in the middle, as shown by the foundation of the pylon, I have taken the liberty of marking the gap at its presumable width, in order to show where the entrance was. With this explanation, no misunderstanding will arise from what is a restoration needful to make the plan intelligible. We found then on digging a trench all round the inner side of this brick wall a continuous enclosure without any break, but not remaining above the road level. The evidence of the stone lining having existed was unimpeachable, as the white mortar backing was to be seen sticking to the black brick face, showing even casts of the backs and joints of the stone. No stone, except one or two small blocks without wrought faces, was found. The pylon in front of the entrance has been built entirely of two stone walls, of the form marked on the plan; the evidence of this is the cast of the stones, remaining impressed on the brick-work filling-in which surrounded them. Thus at present there are two hollows of the form of the walls; hollows through a bed of mud-brick two or three feet thick, with clean vertical

sides, and a floor of sand on which the stones were bedded.

29. Now for the somewhat inductive restoration of the thickness of the stone casings of the building, and width of the entrance. First, the lining of the body of the hall we should expect to be over thirty inches, as otherwise it would be too thin for the height, which was probably thirty to fifty feet; and yet it would be under sixty, as it would not be thicker than the independent, free-standing pylon walls. Now the side walls of the pylon had probably a structural connection with the plan; and if a square hall for passage into the interior of the temenos existed in the building, with sides in prolongation of the pylon walls, it would show a thickness of fifty inches of lining to have existed. This is only an hypothetic arrangement, but it agrees so well to the remains that I have dotted in such cross walls on the plan.

Next, the width of the doorways would probably be the same as the width of the pylon entrance, 140 inches.

Next, for the outer coating there are several clues which agree closely. It is indicated by the point at which the thick brick pavement around the pylon walls ends; this is at 96 out from the mud-brick core of the wall; probably it was broken away somewhat in getting the stone out, and would indicate therefore a less thickness; but, on the other hand, the mud-brick core is thicker here than elsewhere, and so the stone was thinner here, and hence the above measure may fairly represent the general thickness of casing—about ninety-six inches. Next, the thickness of coating on the sides of the entrance would very likely be equal to the corresponding walls of the pylon, since all alike had to bear heavy lintels and architraves; and this end thickness might well be that also of the outer casing exposed to weather; this is ninety-seven inches. Lastly, if the outer width of the building was exactly a quarter of its length, a proportion which must have nearly held good in any case, the casing would have been ninety-three inches. Hence ninety-five inches is not likely to be far from the truth.

Comparing the size of this building then with the great mound of chambers, we see that it was made with its outer length just double the side of the great building in the temenos, and its outer width just half of this; or the areas of the buildings were equal. The figures are, half of restored length of gate building, 2159; double breadth, 2160; sides of square building 2158 north, 2147 east, 2153 south, 2123 west, inches. The cause of a late building being thus connected with the dimensions of an earlier is not far off in the fact that they were both laid out in the Greek foot, so that the later architect using the same measure would readily imitate the dimensions of the preceding building. The foot is rather short for the Greek foot, but the dimensions clearly follow that, and not the Egyptian cubit.

Width of pylon, and supposed inner hall	575=48	ft. of	11·98
Length of building at gate .	4318=360	„	11·99
Breadth	1080=90	„	12·00
Breadth of building in temenos	. 2158 to 2123 } 180	„	{ 11·99 11·79
Modulus of internal arrangement of this building . . .	195=16	„	12·2
Width of great wall at ends of gate building	580=48	„	12·08

These dimensions are therefore so closely round numbers of English feet, that I ought to state that none of them were measured in round feet; and many result from piecing together different measures, all taken to the nearest inch. It will be seen that most of them are also even multiples of cubits of a foot and a half—32, 240, 60, and 120.

30. On excavating on the site of this building, we found between the jambs of the pylon, toward the south side of the entrance, a large ram in white marble; and in the foundation hollow of the southern side of the pylon a fellow ram. Both of these were of good work, but having lost the heads, and all the legs, the torsos were not

thought worth removal owing to their weight—about half a ton together. They were therefore reburied under several feet of earth, after taking a photograph of one of them. Besides these, at the entrance of the pylon, was found a white marble base slab of another and smaller animal figure, doubtless another ram; and on the front of it the dedication to the Theban Zeus (pl. xxx.), or Jupiter Ammon, the Greek form of Amun lord of Thebes. The slab was 16 × 36 × 3½ inches, and the hollow in it for the statue 30 × 10 inches; the inscribed end is now in the British Museum. The wear on the edge of the stone, by persons passing it into the building, shows that the inscription and animal faced outward from the building, and not sideways. As there is twelve feet of earth over these remains of the foundations, it is rather serious to clear large areas here; a digging about the middle of the south end of the building, however, brought up a scrap of inscription on white marble, probably of Ptolemy Philadelphos, having the letters . . ΕΛΦ . . . (see pl. xxxi.).

31. The most important result, however, obtained from the site of this destroyed structure was the discovery of the ceremonial deposits of the models placed here at the time of the founding of the building. There were four deposits all alike, one beneath each corner; and two smaller deposits at the corners of the central hall. The first find, that of the south-west corner, was quite accidental; some children took refuge from rain in a shaft I had sunk there, and amusing themselves by scraping out the sand of the side of the hole, they found the objects. Their father brought two of them to me one evening, a bronze adze and a libation vase (pl. xxv. nos. 3, 12). The adze reminded me of the many model hoes in the Louvre with the name of Hatshepsu; and the vase distinctly showed offerings to be connected with it. I at once said to Mr. Griffith that they must have found a ceremonial foundation deposit; and in a day or two an iron hoe (no. 5) was brought, with a cartouche of Ptolemy II. in lapis-lazuli (no. 11), stuck on to the rust of it. This confirmed my guess; and though the man at first would give no indication of the place, and we had thought they might have been brought from Kom Afrin, yet on pressing him about it, he told me of the hole. As soon as I knew it I had pits sunk in the corresponding places at the other corners, and further cleared out the first find. Not being certain of the depth, or exact place, I could not watch the digging continuously; so that the next deposit found, at the north-east corner, was cleared, contrary to my orders, while I was elsewhere. The north-west deposit I just caught the digger at when he reached it, by seeing a chip of the limestone mortar in the stuff which had been thrown out by his basket-boy; and so I was able to clear nearly the whole of it myself. The south-east corner was last found, and the end of the digging I did myself to ensure not disturbing the things. Unluckily, this lot had been more injured than the others in ancient times, but the place of everything was measured and noted as I uncovered it.

On looking at the plan (pl. xlii.), the sites of these deposits will be seen in the space which was covered by the inner lining of the building, marked by small black rectangles adjoining the mud-brick wall in each corner. These rectangles mark the size of the deposit of yellow sand in which the models were placed. Beneath all the stones of the building was placed a layer of a few inches of light-yellow desert sand, the ground being a dark grey-brown sandy mud; and where the deposits had to be placed a rectangular hole had been cut in the ground, the models placed in it, and sand poured over them to preserve them. The lining stones of the building then lay over them; and it was in dragging out these stones in Roman times that the deposits were much crushed and broken. The deposit will be observed to be to the left hand of the observer as he stands facing the corner, this place being perhaps ceremonial; or perhaps due to placing the deposit under the middle of a stone, and the stones running regularly

around, the left-hand one always fitting the corner, and the right-hand one butting against its face—the regular alternate bonding of the corners in Egyptian work making this a likely arrangement. The same position will be seen to be taken for the one gate deposit of which I can fix the site; the black spot on the south side of the inner doorway of the building shows the position, and it is similiarly on the left hand of the corner of the supposed central passage-hall. This completes all that is yet known of the arrangement of this building; the height may be conjectured to have been as much as that of the great wall of the temenos, some forty or fifty feet, both on account of the appearance, and also as otherwise the rain would have washed down the mud from the brick wall on to the building.

We will now turn to the details of the ceremonial models, and describe a completed set. They may be ranged in three classes, ceremonial instruments, tools, and materials. Of the first there are the two libation vases (pl. xxv. 12, 13), of green glazed sandy ware, the spouts perforated; the four cups for offerings (14, 15, 16, 17), of similar ware. The long bronze knife (18), and the long-handled bronze axe (19), apparently for sacrifices. The model pair of corn-rubbers (pl. xxvi. 32, 33) are of sandstone, such as the actual rubbers are made of; the upper stone (33) has the two handles, which are almost always lost from the real rubber; a perfect example, however, I picked up at Tanis, and it is now in the British Museum. The mortar of limestone (34). These corn-rubbers and mortar we may probably class as ceremonial, most likely referring to some ceremony of grinding corn and pounding food; it is possible, however, that the building may have been a granary belonging to the emporium, and these implements then symbolic of the use of the building.

Next are the models of the tools. The iron hoe (5) for digging the foundations, and still more for digging the mud of which the bricks were made. The iron mortar-rake (6) for mixing the mortar for the building; the hollow handle has wood still in it from a wooden handle; and in removing the sand, a long brown vein was observed in it, probably the remains of the wooden handle. Strange to say, a few weeks after finding this, I bought in Cairo the only actual mortar-rake that is known from ancient Egypt; it is of bronze, of just the shape of this model, with a hollow handle: I was told it came from Abu Homs, north of Damanhur: I have now presented it to the British Museum. The bronze adze (3), such as is represented in the hands of masons. The bronze chisel (4), either for stone or wood; it is of exactly the form of a modern morticing chisel, splayed end, deep body, and hollow socket: two large iron chisels of this type and fragments of several others I obtained at Naukratis, one certainly of about the middle of the sixth century B.C. The bronze trowel (2) for laying the mortar; or possibly another form of chisel. The bronze hatchet (1); this and the axe (19) might be both for the same purpose, as they were not found together in any one deposit, but the difference in form suggests that one would be better for slaughtering an animal, and the other for chopping and trimming wood. The four pegs of alabaster (7, 8, 9, 10); as four of these were found in two of the deposits, it seems as if this number was intentional; the only objects that they can represent seem to be four white pegs for marking out the four corners of a building.

Thirdly, the samples of materials. The model mud-brick (21); just a piece of Nile mud squared neatly like a brick of the wall. The brick of green glazed sandy ware (20), representing that material used for decorations. The cut and ground plaques of precious stones, turquoise (27), jasper (28), pale lapis-lazuli (29), and agate (30). The chips of more valuable stones (31), comprising the richest blue lapis-lazuli, best red jasper, best green turquoise, and translucent obsidian: all these stones were probably used in some decorations of mosaic-work in the place; the chips were found in about half the instances in the glazed cups, placed

there to keep them together; the others loose in the sand, had probably been in the broken cups. I only obtained the chips from the two finds which I cleared out myself, by rubbing all the sand through my hands in a thin stream. The five metals in sample model ingots; gold (22) a square of thick sheet silver (23), lead (24), copper (25) and iron (26); the ingot of iron being so much larger than that of copper, shows how much commoner iron was than copper at the time. Lastly, we have the two cartouches of Ptolemy Philadelphos, engraved on the two sides of a cartouche slip of lapis-lazuli (11).

32. To preserve as full a record as possible, I have drawn the plans of the deposits in each corner, in pl. xxvi. Each corner of the square there represents the corner formed by the two walls, the end of the great wall, and the side of the Ptolemaic wall; and the objects are drawn to scale in the position in which I found them, drawings and measurements having been taken one by one, as each object was uncovered, before removing it. The numbers refer to the full-size drawings of the small objects (pl. xxv.), and the half-size drawings of the larger things (on pl. xxvi.); the numbering of these is continuous, in order to avoid confusion. The south-east deposit had been a good deal disturbed, and does not seem to have been very regularly arranged at first. The north-east I give according to my cross-examination about the things, one by one, both from the digger and from my overseer, who was present, but I cannot say I much believe in it. The north-west is the best plan for regularity, and seems not to be much injured; the pair of corn-rubbers stand one on the other, just below the mortar; the two libation vases at some distance north and south; and the cups in a row between the central mortar and the north libation vase; two of the alabaster pegs are symmetrical to the mortar, but the other two and the hoe had been taken out before I arrived.

The description will be completed if I give a list of the objects, noting how many were found in each deposit, and to what collection they have been placed, by the letters in each column, those in parenthesis being broken; B standing for the Bulak Museum, L for London (British Museum), A for America (Boston), and G for Germany (Berlin). The breaking up of the original sets is a necessity, in order to supply the earliest claims of the Bulak and British Museums.

	N.E.	S.E.	S.W.	N.W.
Libation vases (pl. xxv. 12, 13)	L L	G (G)	A B	(A) B
Cups (14, 15, 16, 17) ...	B (B B)	(G G G G)	(A)	L L L (L)
Knife (18)	(B)	...	(G)	L
Axe (19)	...	...	(B)	L
Corn-rubbers { Upper (33)	...	L	...	B
Corn-rubbers { Lower (32)	G	L	A	B
Mortar (34)	B	(G)	L	(A)
—				
Hoe (5)	(B)	...	L	...
Mortar-rake (6)	(G) ?	...	...	L
Adze (3)	(G)	...	L	B
Chisel (4)	G	...	L	B
Trowel (2)	B	L	...	...
Hatchet (1)	...	(L)	...	...
Pegs (7, 8, 9, 10)	G G G G	B B	B B A	L L L L
—				
Mud-brick (21)	B	(G)	...	L
Glazed plaque (20)	B	...	G	L
Turquoise (27)	...	...	G	L
Jasper (28)	...	B	...	L
Lapis-lazuli (29)	B	B L	G A	L
Agate (30)	...	L	...	B
Chips (31)...	...	B	...	L
Gold (22)	...	...	...	L
Silver (23)	B	L	...	...
Lead (24)	B	...	...	L
Copper (25)	B	...	...	L
Iron (26)	B	...	...	L
—				
Cartouche (11)	B	...	L	L
Classes preserved in each find	19	14	12	23

Besides these deposits in each corner of the whole building, there were lesser deposits below each corner of the supposed central hall; one of these is marked on the plan (the south-east), the other was the north-west, the mark of the exact place of which was lost in later working when I was not present. The other two corners were carefully worked over with special instructions, but nothing was found; they may have had their deposits destroyed. The find was only one libation vase, and one or two broken cups in each instance buried in the sand-bed beneath the stones.

33. Having now rendered the most complete account that I can of these most interesting and suggestive finds, we may turn briefly to what is known hitherto of such a class of antiquities. Several model hoes of wood with bronze blades bound on, and inscribed with the cartouche of Hatshepsu, were found by Arabs below the temple of Deir-el-Bahri many years ago: some are in Bulak, and some in the Louvre. Whether any other things were found with them seems unknown. I have been informed of a number of model tools, offered for sale by Arabs in a small wooden box, near Sakkara, and these may have been a foundation deposit. In 1818, Mehemet Ali sent as a present to Sir Sydney Smith a gold plate, found in the ruins of Kanobos; it was discovered between two vitrified opaque tiles, blue and green. The inscription on it was:

ΒΑϹΙΛΕΥϹ ΠΤΟΛΕΜΑΙΟϹ ΠΤΟΛΕΜΑΙΟΥ ΚΑΙ ΑΡϹΙΝΟΗϹ ΘΕΩΝ ΑΔΕΛΦΩΝ ΚΑΙ ΒΑϹΙΛΙϹϹΑ ΒΕΡΕΝΙΚΗ Η ΑΔΕΛΦΗ ΚΑΙ ΓΥΝΗ ΑΥΤΟΥ ΤΟ ΤΕΜΕΝΟϹ ΟϹΙΡΕΙ

(See British Museum Library Catalogue, under "Ptolemy"). This evidently is the record of the foundation of a temenos to Osiris, at Kanobos, by Ptolemy III., Euergetes I. (247—222 B.C.), the successor of Ptolemy Philadelphos, who founded the building at Naukratis, and placed his cartouches there. Another Ptolemaic foundation deposit, with inscribed plates of gold, silver, copper, and terracotta, has lately been found at Alexandria. There is also a literary record of a foundation deposit by Amenhotep III., when he placed a stone with the cycle of the twelve Theban gods engraved on it, beneath a temple at Thebes.

After finding now the exact place in a building where such deposits were laid, it is not too much to hope that future explorers will learn more of the history of foundation deposits, and the age of the buildings they examine.

34. The later history of this erection of Ptolemy II. may be briefly told. The stone was all carried off, and dragged out of the very foundations, in the early Roman period. At the north end the rubbish fallen from above, after the removal of the masonry, is plainly seen in sloping strata against the butt-end of the great wall; at eight feet below the present surface, or about eight feet above the foundation, was found an Alexandrian coin of Augustus of 13 A.D.; at about two feet higher another of Domitian, 92 A.D.; and about four feet higher still, or a couple of feet below the present surface, one of Hadrian of 132 A.D. Another find was that of a beautiful steatite dish of a shell-form, with a handle representing an eagle's head, with inlaid mother-of-pearl eyes. This is plainly Roman, and not late; it was found about half-way down to the foundation near the middle of the building. It is now at Bulak. As the rubbish would accumulate more rapidly at first than afterwards, the destruction of the building may be fairly put down to the beginning of the reign of Augustus; and we may not improbably see its cause in the taking over of the government by the Roman power, and the abolition of old offices and business, together with the need of new buildings for Roman officials. It seems only too likely that the large limestone buildings, on Roman red-brick foundations, of which the traces remain in the form of large heaps of burnt lime-slag, were constructed from the spoils of the building of Ptolemy Philadelphos.

35. Returning now to the later history of the large building in the Great Temenos, we see that it had fallen to ruin to some extent, like the wall

of the temenos itself. The plan (pl. xliii.) plainly shows the additional walls built against the sides, to cover up what had suffered from the weathering of three centuries, and to strengthen the structure. This is an additional reason for placing the foundation of this building long before Ptolemy II.; as some long time must have elapsed since its foundation for it to need such massive repairs, and no one later than Ptolemy II. is likely to have spent so much labour on it, as the place was decaying, and in Roman times was abandoned to private dwellings. It is probable that to this same restoration of the building we should attribute the solid filling in of the main passage, and of some lesser passages and chambers; presumably owing to the decayed state of their walls not affording a support to the wooden floor. This is confirmed by finding a copper coin of Alexander in the filling in of the north end main passage. The floors of the cellars were also raised, by thowing in large quantities of chips of stone, and rubbish from masons' shops; and the most likely source for such an amount of stone rubbish is the work carried on in building the great stone building in the gateway of the temenos. Among this stone rubbish (which was all taken out from the chambers as we cleared them) a few objects were found. At the north end of the main passage and in the cellar on the west of it were many scraps of stone, roughly squared or smoothed, and with scribbles of a few characters of demotic upon them, one or two of fairly good work. With these were one or two pieces of sculptors' trial work, and some with drawn squares. In the stone rubbish of the next chamber on the west was found the beautifully wrought figure of a dancing-girl in hard limestone, headless and footless, as it probably was when abandoned by the sculptor in consequence of an accident to the work. The figure had been entirely finished, so the cause of its rejection must have been a fall at the last moment, which broke it up. A deep collar is worn around the neck in front, balanced (Egyptian fashion) by a counterpoise behind; the collar is made in relief with plaster pendants, gilt and coloured red; the counterpoise is painted with red. Around the waist is a girdle, with a sacred eye at the back, tying in front, and with the ends descending one in front of each thigh, and finishing in lotus-flowers. The fingers have rings painted on them. The nails are most delicately wrought. The attitude is Egyptian, the legs being close side by side, and the arms placed down the sides, with the hands touching the thighs. The fullness of the bust marks the work as of the Ptolemaic time, and the style is the best of that period. The reason for thus raising the floors of the cellars with stone rubbish was probably to render them drier, as the water level would have sensibly risen in the course of three centuries. In all cases of clearing a chamber we went down below the flooring of chips of Ptolemaic age, and in nearly all cases as deep as we could in the mud; in some chambers the base of the wall was distinctly found, as I went down and cut a deep section to examine it. The levels of every point that I determined are entered on the plan, above the usual datum of all published levels; but, unfortunately, as most of the chambers were cleared while I was away at San, many levels were not taken. The parts filled up with solid brickwork we did not clear, except the north end of the main passage.

36. In later Ptolemaic times the chambers became gradually filled up with dust and rubbish, and after the destruction of the building at the gateway of the temenos, in early Roman times, the chambers here seem to have become all filled up to the first-floor level, and remains of dwellings of about the second century were found in the north-east chamber of the west central four, and in the north-east chamber of the south-west four. The objects found of about the Roman time here are as follows. A remarkable mask of the upper part of a face, in gypsum (pl. xviii. 2), modelled in such a realistic way that I at first supposed it to be a cast from a man's face; it ceases, it will be observed, where the beard would begin, and the curves of the frontal-bones, cheek-bones, and

flesh around the nose, are purely naturalistic. The back of the piece is flat; and the hollows of the eyes are flat at the back, and smoothly undercut around the sides, so that anything introduced at the time of casting to form such a hollow could not be removed, yet there is no trace now of anything in the hollows; the filling must have been of wax, afterwards melted or picked out. Why the eyes were thus left as hollows and yet undercut is a puzzle; perhaps glass irides were to have been inserted with plaster; if so, this might be for a coffin-lid. It was found in the dust, a little below the first-floor level, in the south-east chamber of the north-west five.

A large block of black granite, which had been used as a nether millstone, had traces of hieroglyphics on it, of which only "Amen" could be read. It lay, with a piece of Roman Samian dish with scolloped border, on the first-floor level, in the north end of the eastern passage. It is now at the bottom of the cellar, under the east end of the north cross passage. A conical limestone draughtman with a knob was found low down in the south-west chamber of the south-east four. Another conical draughtman, and the head of a squatting figure (type pl. xix. 1) were found at the bottom of the next chamber on the east, and a rude stone figure at four feet below first-floor level. A blue glazed vase was found in the chamber of the north-west corner. Unfortunately, nothing was preserved from the chambers cleared while I was away. Outside of the building a small coin of Alexander was found at six feet below the present surface, or about four feet above the foundation, on the north side. Rather higher up was a Ptolemaic king's head in plaster, a cast for a sculptor's use. And in an inner corner of the later walls on the west side stood a very large stone mortar; such are common at Naukratis, as I have seen two or three more about the village.

The last point of the history of this building is the erection of a Coptic chapel on the top, some fragments of plastering, with part of a cross done in red paint, having been found there. Twenty or thirty years ago the mound began to be used as a part of the Arab cemetery, and the tombs on the top have checked the ravages of the diggers for earth, the *sebachin*, so that they had only destroyed the outer wall down to the ground, and the central part still rose twenty-four feet above the plain when I first saw it. My men dug out all that they properly could without touching the graves, the removal of which I supposed impossible. However, the *sebachin*, not content with removing the earth we loosened, began to attack the mound, and made such havoc with some tombs that the representatives of the families interested complained of it, exonerating me from any share in the profanation, but begging to have labour granted them to move the whole of the bones. I replied that I would pay them the wages of any number of men they might want for the matter, so that the removal should be their act, and not mine in any way. Thus in a week or so a large general tomb was built for each of the two families, and I had the delight of seeing all the bones carried off in baskets out of my way for a trifling cost. I then went on clearing all the chambers, and the *sebachin* took away the earth only too readily. I do not expect to see much of the citadel of Naukratis left next time I go there.

Beside the two great buildings in the temenos already described, there were numerous lesser structures against the inner side of the north wall. These were only partly examined, but fragments of large bowls of basalt found here (pl. xxxvi. 4, 5, 6) suggest that some chapels to Egyptian gods existed here in Ptolemaic times. Nearer to the gateway are houses of late Ptolemaic or Roman age.

Within the uncultivated area of the temenos I sank many pits down to water-level, but never found anything but a block of basalt. Close to the surface, in some Roman buildings west of the great chambers, was found a fragment of marble inscription, mentioning a temenos (pl. xxxi. 9), but it might have been brought as building material in Roman times.

CHAPTER V.

THE HOUSES OF NAUKRATIS AND THEIR CONTENTS.

37. The plan of the streets of the town, so far as they can be traced, on pl. xli, will show their general arrangement. As has been said before, the difficulty of tracing the slight indications that could be seen was considerable; and hence some rectification of this plan may, perhaps, be made by future work, particularly in those parts in which I have had to make extensive guesses at restoration, owing to the ground being covered with a thick coat of pottery and earth, or being totally denuded. The enclosure, which is supposed to be the *Palaistra*, does not seem to have contained any large stone building, as no chips of stone are found about it; it seems rather to have been a secular building of some kind, and as the *Palaistra* was dedicated to Apollo (see inscription pl. xxx.), it is likely to have lain near the temple of Apollo. It is doubtful whether there was an *agora* at Naukratis, as the Pan-Hellenion would fulfil so many purposes of an *agora*. Religious processions and festivals, public deliberations, the headquarters of the city officials, and monuments and memorials, would all have their natural place in the great civil, religious, and military enclosure of the Pan-Hellenion. It would only be the more private side of civil life, the gymnasium, palaistra, and stoa, that we should seek for in the city.

It will be seen that there are at the upper and lower margin of the plan two sets of arrow-lines; these point to the directions of the streets, which appear to have been built from two rather different bases. The lower set of arrows is parallel with the Great Temenos wall, and points to the streets of the eastern side of the town more particularly; while the upper set points to a system of streets which make a small but distinct angle of about 10° or 12° with the other series. This seems most likely to have been the system derived from the line of the canal which skirted this side of the city. Two such systems together show that there must have been some other element beside the canal-line to influence the builders in the earliest times; and it seems therefore to give some weight to the early age of the Great Temenos. (On the subject of lines of roads and streets, see *Proc. Arch. Inst.* February 1, 1878.)

Comparatively little was done in excavating in the town, the three places which took up nearly all our work being the gateway building in the Great Temenos, the large block of chambers in the same, and the temenos of Apollo. Most of the objects from the town were therefore obtained from Arabs digging there for earth; every day during their digging season I used to go out and buy up what they had found, often spending more than an hour in going round the place. Hence I seldom knew the details of a find, and even the site of it was often not known; so there is not the completeness in the following accounts of these finds which would otherwise have been attained, and it seems to be best to simply treat them in their chronological order, as nearly as I can.

38. Perhaps the earliest of the miscellaneous objects are the pieces of engraved shell (pl. xx. 10, 12, 16), which were found scattered in different places, the largest (no. 16) coming from the south side of the *palaistra*. These belong to the class of engraved shells of the *Tridacna squamosa*, isolated examples of which have been found in places widely separated, Canino in Etruria, Bethlehem, and Assyria. Five specimens are known hitherto, and here at Naukratis are fragments of three more. It seems not improbable that this city may have been the home of such objects, and that they may perhaps have all had their origin here. Among the shells collected at Naukratis, is a small *Tridacna* not worked; this proves that these shells in an unwrought state were brought from the Red Sea to Naukratis. Next there are two other examples of wrought shells evidently belonging to Naukratis, the fragment of mother-of-pearl (pl. xx. 11), and a piece

of a long cone shell, smoothed but not yet engraved. Thus we see that shell-working was done here. And, thirdly, we have in six months found here more examples of engraved *Tridacnas* than have been found in any other place. The strongest reason for the attribution of these shells to Phœnician workmen is the Assyrian style of the patterns; but this is not conclusive, and we must now consider their origin undecided until further evidence may appear.

39. An interesting class of the archaic remains are the figures (pl. i.) carved in soft alabaster and limestone. These are found in almost the oldest stratum of the town, principally along the middle of the eastern side. Whether found in houses or thrown out into the roads, I have never seen, as they have always been found by diggers not in my employment. Several of those found are shown in pl. i.; and beside these have been found a part of a female figure closely draped round; two or three much injured male figures in alabaster; and two or three heads, a male figure the upper part of Hermes Kriophoros in limestone. The warrior in alabaster (pl. i.) is exactly, both in form, helmet and armlets, the counterpart of a statuette which is figured in Cesnola's *Cyprus*, as having been found in that island. How far Cyprus may have been indebted to Egypt through Naukratis, or Naukratis may have borrowed from Cyprus, we cannot yet say.

Another class of figures are the very rude stone heads and statuettes which seem to belong to a really archaic time. There are four or five heads of limestone of a very primitive type in the collection; two or three limestone figures which are oblong masses, with the dimmest indications of limbs and head; and two or three more shapely figures with disc-shaped heads, long hair, and the hands folded over the stomach. These all seem not to belong to the archaistic revival, nor to a mere rudeness in later times, but to a genuinely primitive art. They may be seen in the British Museum.

Of a late time, apparently the middle of the fifth century according to the Apollo deposits, are many archaic terra-cottas. Those found in the temenos of Apollo have been already described (sect. 17); and besides these many horses, such as those seen in models of chariots from Cyprus, were found in the town. They are partly plastered, and have traces of red and yellow paint. Some bird-vases of this same archaic terra-cotta were also found; and several pieces of figure-vases, with a spout in the top of the head.

Some curious female busts of painted terra-cotta also belong to this place. They are about three inches high, covered with a white face characteristic of Naukratian ware, and painted in bistre or ochre.

40. The source of the glazed pottery or sandy-ware figures was evidently in Naukratis itself, since we have found there the factory of such articles. At the place marked in pl. xli. "Scarabs," near the south-west of the town, a bed of earth was found, partly cut away by the Arabs, in which were many remains of a factory of glazed pottery. This bed was, much of it, of a yellowish colour, apparently owing to the decomposition of some matter thrown away with the rubbish from the factory. The pottery of this place has already been sufficiently described in Chapter III.; and it remains for us now to notice the other remains found here. First, and most characteristic, there were found large quantities of glazed scarabæi, and of the moulds used in making such. The types of the scarabæi, and such small objects with a head, a lion, or other form on the back, are shown in pl. xxxvii., which includes what were found both in the scarab factory and elsewhere in the town: those actually found in the factory having a small F marked at the lower right-hand corner of each. The un-Egyptian character of many of the types is evident, and those at the end are distinctly done by men more familiar with Greek vase-painting than with hieroglyphics. Of these types several

have been found in exact counterpart in Rhodes: no. 4, but with a scarab at the back; a lion such as those here, nos. 50, 64, 69, 80, 92 and 104, and with a type between nos. 13 and 21; one intermediate between 18 and 19; no. 18, but on a blue glazed disc, as 15, 16, and 17; no. 35; no. 36 and no. 91. Beside these, which are apparently from the same batch as those here drawn, the general fabric of the Rhodian scarabæi is unmistakably the same as the Naukratian; and if not actually out of the factory that we have found, we cannot doubt their belonging to the same race and town.

The material of the scarabæi is usually a very soft friable sandy paste; glazed over, in good specimens, with a hard glaze. This glaze is sometimes blue, sometimes green, and when yellow seems almost too bright to be merely decomposed green such as gives the colour to all the ordinary Egyptian brown scarabæi: the white specimens are faded blue, as we may see by the transition examples; many objects are of fine but soft blue paste, including the rams' heads, 135–6, 143–4. The most important with regard to age are nos. 79 to 82; 79 is a very unusual one, of soft yellow paste, inlaid with brown on the back in the figure of a goose with spread wings, and a rope border: this and the next two are of a Psamtik, probably the first, and no. 82 is of Psamtik II. It is a question whether nos. 71, 72, may not also be the banner of Psamtik II., *Ra-men-ab;* and whether 53 may not be the cartouche spelled with the hawk for Ra. Some other king's names, probably belonging to petty vassals of the time of the dodecarchy, may also be read in nos. 49, 50, Ra-men-hor; and 52, Ra-aa-hor. Scarabs of Ra-men-hor are rather common, often bearing in conjunction the name of Ra-men-kheper, which may be the cartouche of the Ethiopian suzerain Pi-ankhi, no. 128: Ra-kheper is the name of Sheshonk IV. Some of the others have well-known Egyptian names, as 116, Petisis, and 117, and 118, Pet-bast; or a title, as 112, Priest of Khonsu; and the common inscription of "Shu son of Ra," 83 and 84, occurs in a new form on 85: the familiar types of "Amun-Ra neb" occur more or less blundered on nos. 89, 90, 91; and "amakhu neter neb" on 108. No. 121 is of a different class to all the others; probably of the nineteenth dynasty; and I suppose it to have been brought to Naukratis.

The moulds for amulets collected here in this stratum, and from the ground on which the Arabs had thrown out the pottery from the part they had carried away, numbered in all 678 for making scarabæi (pl. xxxviii. 1 to 5), heads (8 to 11), and discs (18); besides a few peculiar patterns, as 8 for square eye plaques (17), 2 for eye bullæ (16), 2 for lions (6), 2 for busts (13), 1 for lion's head (12), 1 for a Bes (15), and 1 for a cone (19). I might have collected more of the ordinary kinds without difficulty, had there been any object in so doing. These moulds differed from those I have seen before, in not having any ducts at the side for the outflow of surplus material; only one with ducts was found in the town. The reason of this is evident; the scarab was not impressed on both sides, but had the type cut in on it: thus they were made by squeezing part of a lump of paste into the mould, pulling it out, and then slicing off the projecting part from the mass by which it was held. When dried the design was cut in, and then the whole was glazed and fixed. Of the material for making them there were found twenty lumps of blue paste, evidently kept as raw material; made up much like old-fashioned balls of indigo, rounded with hollowed sides; also two lumps of greenish-blue, one of green, and two of yellow-green paste. This paste was used, after being finely ground up, for making blue paste scarabæi, and to colour the blue glaze for pottery scarabæi.

It appears that this factory was not only for scarabs, but for other manufactures in the same materials. The necks of 'pilgrim-bottles' of fine yellow paste show that such belong here. Many pieces of thin rough white tiles for inlaying were found, coloured blue on the face, and with the

mark of the cloth on which they had been moulded on the back. This use of cloth is like that of moulding 'pilgrim-bottle' vases on a bag of cloth, which left the mark of the cloth on the inside; such a vase was found in the scarab stratum. Another curious object was a group of a chariot with four horses, done in a very rough style, the divisions between the horses being only lined out: this was made with green glaze originally, which has gone porous and dirty yellow; a similar group, of stone, was found in the town. A piece of rim of a bowl in blue paste was found here, and a dish containing a quantity of blue paint ready for use. Some other pieces which were found here were almost certainly from the scarab factory, but had been dug over by the Arabs. Among them pieces of a curious mottled paste, brown or grey and white, in close streaks running through the mass; it was glazed blue on the outside. Many small Egyptian figures, double eye, hawks, Ptah, Anubis, snake, beads, &c., were also found in the disturbed stuff; and as moulds for sacred eyes and Bes were found in the stratum, we can hardly avoid attributing all these figures to the factory. A whetstone and some copper-slag found here show the collateral business of the establishment.

41. We will now turn to the scarabæi found in the town, which are made of stone. Having seen that many, or perhaps all, of the pottery scarabæi in the Rhodian tombs were from Naukratis, we may probably attribute the Rhodian stone scarabæi to the same source, as many of them are exactly like the Naukratite examples. These are small, white, and deeply cut with lines, such as nos. 170—174. Whether we should attribute the large steatite plaques, 156, 157, 158, to Naukratis is questionable. I am inclined to do so, since the monkeys and palm-tree type is found executed in the style of these large coarse figures, and that type is also found on the distinctively Naukratite ram's head of blue paste, 136. The horse scarabs with "neter nofer, neb taui" are also of this style, and are found here (no. 153). Looking at all these various examples of different patterns, from nos. 149 to 153, and 156 to 158, all found at Naukratis, as I was repeatedly told, it must be clear at least that this style belongs to the twenty-sixth dynasty or later, as such a variety would scarcely have been collected from earlier sites and brought to the later Greek city. No. 156 shows an important fact: it is broken, and broken presumably after it had left the maker's hands; yet the broken face, which we can hardly suppose to have any artificial preparation, as it is quite rough, has the browny-white, very hard coat which is found on steatite scarabs. This shows that this hard coat is not necessarily artificial, as I had believed before, but is due to a natural decomposition; from its smooth and dense appearance, it is scarcely perhaps due to a solution of the magnesia leaving an excess of silica, but rather to the lime always present in solution in the soil, forming a double silicate of lime and magnesia, like batrachite or monticellite, which are as hard as this white compound.

Of the other scarabs here, the most noticeable are no. 174, with apparently an ichneumon sacred to Bast, agreeing with the bronze ichneumons found along with figures of Bast at Naukratis; no. 176, with a most delicate representation of a figure worshipping a hawk-headed crocodile, with the disk of the sun and sacred uræus on its head, apparently a combination of Ra and Sebak; the marsh plants behind it show its position: 182, Seti 1; 183, Psamtik; 184, 185, 187, Psamtik I. or Uah-ab-ra; 186, Psamtik II.; 188, a most delicate scarab of a high priest of Sais; 191, perhaps of Ramessu xiii. (of Königsbuch, xvi. of Maspero, xv. of others), Ra-ma-men-neit; and 193, which may possibly be of Ramessu iv., Ma-ma. Some of these may very probably be older scarabs imported into Naukratis.

42. We have already noticed the figures of glazed pottery made from the style of Egyptian prototypes, which were found in the temple of Apollo. Others were found about the scarab

factory and in the town, and are shown in the lower line of such figures in pl. ii. These are closely akin to those found in Rhodes, both in form, colouring, and material, and would be indistinguishable except from the accident of having been buried in a mud soil instead of a rock tomb.

43. A large and important class of objects are the iron tools found so frequently at Naukratis. They were always described to me by the Arab finders as coming from the low strata of the town; and in two or three cases, where the exact level could be measured, I found it to be 320 and 330; this would correspond to the sixth century B.C., as the scarab stratum of 580 B.C. is about 330 level; and the find of Athenian coins, about 460 B.C. (which was close to the neighbourhood of the iron tools), is 370 level. What renders these iron tools of great interest is the large quantity of iron-slag found in the old strata of Naukratis, and occasion pieces of specular iron-ore: these prove that the iron was actually smelted and manufactured on the spot, and that this was a great centre of the iron trade, if not indeed the principal source of manufactured iron to the Greeks of the sixth century. The classes of tools which were readily recognizable will be seen illustrated in pl. xi. Of chisels, 28 were found for cutting metal or stone (figs. 19, 20, 21) with flat ends, six for metal or stone with pointed ends (12), usually smaller, as if for finishing out corners and angles; of chisels for wood, two large socketed ones (14) were found (one levelled at 320), and three sockets of broken chisels, some with the wood of the handles still in the socket; and four chisels with tangs (13) for fitting into wooden handles, of various widths. Two celts were found (24), one partly broken, with the hollow socket and broad edge characteristic of this type. An axe (25) with a hole for the handle. Two hoes (5) with a bend in the length, evidently to be bound on to handles. A sword (1), much broken up. Six knives of various sizes (7), and many fragments. Two sickles (11), the handles broken off. Six borers with tang handles (10, 23), apparently to rymer out holes to any size required; and two others with hollow-socket handles (15), to fit on to a wooden handle. A small gouge (22), perhaps for stone-work. A double-handed pick, with the edges at right angles at opposite ends (17), and a hole in the middle for the handle; probably for fine stone work. A scraper (?) for stone or metal work (18), much like a plumber's scraper. Six bodkins (26), perhaps for making sails of Egyptian linen for the Naukratis shipping. Two lance-heads (27), one of the fourth century B.C. Four arrow-heads, all of different types (fig. 2, levelled at 320; figs. 3, 4), flat, barbed, and triangular. A large pig of iron found at level 350 is certainly of the early period; about three inches square and a foot long originally, now all broken up by rusting; it was thickest at about a third from the end, tapered slightly to one end and considerably to the other. It seems to have been such a mass as the metal was wrought into for sale in bulk. A poker, in the shape of a hand at the end of a staff (6), such as is known in the sixth century in Etrurian remains; perhaps the Etrurian examples came from Naukratis. Of later times was a large find of fish-hooks (8, 9), many dozens of which occurred in a chamber at the south end of the town, probably of the beginning of the Ptolemaic period. An iron wall-hook, many nails of Ptolemaic and Roman age, and two keys of Roman time, together with a large quantity of scraps of various objects, complete what we yet know of the iron trade of Naukratis. If the factory is ever cleared out, we may perhaps get a find equivalent to that of the scarab factory; but already this collection shows us more than was known before about the forms and uses of Greek tools in the archaic times, and indicates the sources of much that is found elsewhere.

44. It appears to have been the custom for the Greeks to stucco over the outside of their walls of unbaked brick, in order to save them from the weather. In a road on the east side of the town

painted stucco was found on the sides of the houses; and on the Great Mound stucco was found on the front of the north wall. On some walls of the temple of the Dioskouroi the best preserved pieces were found, several large flakes showing that the stucco was hard and white, and the painting was in chequers of red, blue, and yellow; the first two colours being just such as were used in painting the marble work of the temple. This and the case on the east of the town I should date to about the sixth century B.C. by their levels.

45. Of a tolerably early date probably is the model of a shrine of Egyptian design (pl. xviii. 3); it is much blackened about the doorway by smoke, which hides partly the red painting. Such a shrine seems like an earlier form of the terra-cotta lamp shrines often found of various designs of Roman age; and such an idea is still familiar to the Arabs (at least at San), who will make mud shrines, or boxes, which they place on a sacred site with a lighted lamp inside; the lamp being a mya-shell, and a scrap torn from a calico shirt for a wick. The blackening around the doorway of this shrine is doubtless due to the burning of a lamp inside it.

A necklace of coral beads was found on the east side of the town, at about the level of the fifth century B.C.; the beads are long and cylindrical, well formed and drilled with a small hole. This is the first coral necklace I have heard of from Egypt. A few beads, similar, but rather fresher in colour, were also found in the town, and are now in Bulak; a couple of beads were in the best necklace which I found at San of Ptolemaic age, and stray beads have occasionally been brought over from Egypt.

A large find of tetradrachms of Athens was dug up by an Arab while I was at Naukratis, and offered to me in great secrecy. Of course I bought the whole of it, as I always did with anything offered to me, so as to leave the less to encourage dealers to hang about the place. Specimens have been given to several museums. The coins were in tolerable condition, but needed cleaning; this I did, and ascertained, by the way, the original weight of each when buried. The details will be found in the chapter on weights, Chapter IX.

46. Many rude stone figures were found of different types, but in few cases did I obtain a clue to the age. They seem to belong to the sixth, fifth, and fourth centuries B.C. Figures of the drummer type were found at the scarab factory, it is believed in the original stratum of 580 B.C. An extremely rough female figure (ruder than xix. 8) was found at 420 level, about the end of the fifth century B.C. And a horseman (xix. 5 type) was found with the bronzes of Ptolemaic age, with fragments of Greek vases of the third century B.C. A broken seated figure (xix. 1 and 3) was found at two feet down in the south-east chamber of the Great Mound, and hence was thrown away about the second century B.C. Thus these figures do not seem to be limited to any special period, and are distinctly not of the really archaic type. The forms xix. 1 and 3 seem in the body to be more like a cat than anything else, yet they have human feet apparently, and always a human head with a wig. With the drummer figures before them, we cannot suppose these to be any way intended for human bodies; nor have they any likeness to the Egyptian form of an ape. The straddling figures (xix. 4) are not so common; they may represent Baubo. The horsemen (xix. 5) are rather common, and are perhaps the rudest of all these classes; the man's head is generally quite unformed. These are often coloured red. The drummers are common; in the best examples the drum on the knees of the figure is painted round the outside in chequers, red and white. The reclining female figures (xix. 7, 8, 9) are a very common class. As they very usually have a small figure standing at the feet, it has been suggested that they are *ex voto* offerings after child-birth; but if so, it is rather strange that none should represent a child being suckled. They are always distinctly reclining, and often have a head-rest beneath the head.

They are never draped, but are without any improper emblems or suggestions. In one case an elaborate painting of lotus-flowers in black and red remains on the background, and a chequer pattern on the front and side of the couch (xix. 7); and in one instance the figure is reclining on its back on a couch striped red and white. On the whole, there seems no other theory of their origin than that stated above.

47. The terra-cotta heads found at Naukratis cover a large field, ranging from the sixth century to Roman times. How many of them were brought from Asia Minor and Greece, and how many may be native, we cannot yet say. Five or six full-length figures of the Tanagra style have been found, one with an unusual bend of the head to one side. But none of these equal the work of the best of the separate heads (see pl. xv); individual comment on these is needless, they tell their own story and age by their appearance, and not by any details of their finding, as all of them were brought to me by Arabs without any history.

48. In a house of Ptolemaic age apparently, outside the Great Temenos, on the north of the entrance was found a cartouche-stamp bearing four Phœnician letters (pl. xx. 17). It has evidently been modelled in wax, as the throw-out of the wax in modelling (indicated by the thin outlines beyond the strokes of the letters) is plainly seen; it has then been cast by the *cire perdue* method. It has a ring on the back. It doubtless is to be read from the head, as cartouches always are read, and as is indicated by the throw of the wax, in cutting it from right to left from the head. With it was found a much worn cylinder of hæmatite, (xx. 18), which had evidently seen long service before being deposited here. It may also be mentioned in connection with this that a cylinder was found somewhere in the town of very fine work in ivory; it has a representation of a man holding two winged oryxes by the horns, as they stand rampant on either side of a palm-tree, the man being on the opposite side of the cylinder to the tree. It is now at Bulak. These were the only Phœnician or Assyrian objects found in the whole of the collection at Naukratis.

49. A large find of bronzes of Egyptian types was uncovered in a house on the south of the town. Unfortunately, some Arabs were induced by the Gizeh dealers, who were prowling about my work, to poach in this digging one market-day while my own men were away, and they accidentally secured a large quantity, apparently all the best of the things. The objects, so far as I know, were not of any historical value; but I much regret their loss, and the loss of the time I wasted in efforts to recover them. The only practical result was that the thieves had the opportunity of visiting the prison at Damanhur, and of making things pleasant to the police before they could get out again. The find, however, gave me some new information as to how such bronzes of small statuettes, and bronze cases with figures of lizards, serpents, &c., are found. These bronzes were buried in the earth, scattered about all through the whole filling of a chamber, some eight feet in depth. One of the finest was found at the top, and the bulk of them two or three feet from the bottom. Whether this was a place to throw in votive bronzes, or whether these were all placed in at once to sanctify the substratum of a building above, cannot be now settled; but I am inclined to the former view. The part of the deposit which I obtained consisted of the following objects, of which about a third were burnt or broken. Bronze boxes, with figures of sacred reptiles on the top, snakes 15, cobras 9, lizards 51, eels 13, ichneumon 1, two human-headed cobras 1, two lizards 4, cobra and lizard 4, three snakes 1. Bast standing, and figure kneeling adoring, on a box. Upper part of a large figure of Bast, fine work, Greek (?). Seated Anubis. Ichneumon standing upright, hollow, with bones inside, 12½ inches high. Human-headed cobra. Cobra on a staff-head. Bull. Cats, 4. Isis and Horus, 4. Winged Isis.

Bust of Isis. Horus. Nebhat, 2. Nefertum, 2. Osiris, 19. Pair of cobras, small. Legs of a large figure. Libation buckets, 3. Beside these, in glazed pottery, Bast, 4 inches high, with inscription. Tahuti. Isis and Horus, 2. Taur in marble, small. Ram's head in limestone, a fine piece. Small pottery hawk, gilt; and ornamented piece, with threading holes, lotus pattern, in green and red pottery, fine work. A burnisher, apparently, of black stone, rather like a celt in form. Two pieces of Greek vases help to date all these things; one a small brown vase with black net pattern of cross lines, and white spots at the crossings, a very usual type; and a fragment of a splendid vase of buff figures on a red ground, ornamented with raised slip, white and gold. These are about the early Ptolemaic period. Beside all these I heard of a large number of bronzes in Cairo just after this find, which I have little doubt came from here. A large Bast was sold to the Bulak Museum, of which I could supply the arm. And Arab dealers had many large and small bronzes, figures, serpents, eel-cases, &c., nearly all injured in burning, like the large ichneumon-case above mentioned.

50. An immense number of handles of amphoræ are found all over the town; and many of them have the stamps, so well known, recording the magistrate's name and the month when they were made. They are mainly Rhodian, as usual; but there has not been time to examine and classify the quantity of about 1200 which I have brought back. A few complete handles were found, and brought to show the types of forms for comparison with the impressed pieces; these are drawn in pl. xvii. Here fig. 17 is the earliest type, belonging to great drab amphoræ of the seventh and sixth century, never stamped, but sometimes cut on the handle with owner's marks. Fig. 20 is a later form, and 21 later still, probably. The three at the bottom, 22, 23, and 24, are earlier types than the bulk of the stamped, which are usually of the form 19. Fig. 18 is not stamped.

51. A curious class of handles are the large massive square blocks which stand upon the edge of the upright brim of circular vessels. The form of these vessels must have been almost hemispherical, to judge by the fragments attached to the handles. They are always of roughish brown and red pottery. The earliest type of this handle is a knob inside a vessel, some way below the brim, placed low in order to prevent its breaking out when raising the vessel full of liquid. A small vessel with this knob was found; and with a hole, strange to say, apparently made by the finger, in the middle of the side. A knob also appears on the edge of circular vessels. These knobs were enlarged, raised above the brim somewhat, and had a ridge down the middle in the inner side, to prevent their being broken off so readily. In this form they suggest a bull's head, and several are found developed into that form, more or less elaborately. But the part above the brim continued to be enlarged, and the rib strengthened and narrowed, until suddenly it was seen to be like a head and beard, or capable of being so developed. At once the idea took root, and ever after the head and beard was the regular type. Such we always called in the work at Naukratis "Bacchic handles," and, in default of a better name for such a large class of objects, it may be kept up. The head type was modified in various ways, more or less ornamental: very generally an oval outline round the top of the head; sometimes a name over the head ΕΚΑΤΑΙΟΥ, or ΦΙΛΑΤΡΟΥ; sometimes a head of Pan rather than Bacchus, with wild hair and horns; and in late times very rude heads. But still, whatever the variation, the long straight ridge of the beard, projecting into the inside of the vessel, is the prominent feature. In one instance (bought at Alexandria, which is a great place for these handles), the outside of the square handle has a female head, full face. A complete set of all the types of development has been kept for the British Museum, and other sets presented to other collections.

52. Of stone tools there are many examples; hammers, whetstones, and drill-heads. The hammer-stones are very common at Naukratis, dozens may be picked up in an hour; they are of all materials, but principally basalt and syenite. The forms are not much like those usually found elsewhere, as the habit seems to have been to hold them between the thumb and the finger, and not in the palm of the hand. Most of the stones accordingly have a hollow chipped out on each side, and are solely chipped around the edge of the discoid mass. Very often old weights were thus used, and many of the weights catalogued have been thus treated. One hammer, perhaps used for cracking bones, is shaped like an hour-glass, somewhat flattened at each end, and with the slight hollows to hold it by in the ends. The whetstones are usually small, two or three inches long, and sometimes pierced to hang them to a girdle; but one large one of the early Greek period is a fine example, and quite perfect. Many rounded pieces of stone are found, with one or more hollows highly polished in them; these are evidently the head-pieces of drill-bows, in which the end of the drill-stick revolved. They are generally of granite or basalt, but even limestone was sometimes used.

53. Of various small articles of the later Greek or Roman period we may notice the bezil of a silver ring with early Greek scroll pattern (xx. 27); also a ring of hard white metal, like modern speculum metal, with a large bezil, quite plain, flat, and polished (pl. xx. 34); this seems evidently to have been a mirror ring, to enable a dandy to verify the details of his appearance. Gold rings with a flat bezil are suggested by King to be for reflection, but none of suitable hard white metal are known to me before. Another curious ring of iron has a key in one with it (fig. 33); such is known before, and a second was found here, but this example is peculiar in having also a raised boss for the signet. Another ring (29) is cut in one piece of burnt cornelian: a similar ring of agate is in the British Museum. A stud cut out of one piece of rock crystal was also found (now at Bulak).

Of small glass objects, there is a "Phœnician" glass seal with a bull tossing (fig. 13); the emerald-green draughtman (?) (fig. 23); the opaque blue pendant (24), and the dark blue glass head (31) bearing a similar face on each side; another head, that of a negro, in the same glass, was also found (now at Bulak). The glazed figure (30) is a good example of the Roman work in glazed ware. The beautiful little Greek figure in terra-cotta (25) has been gilded originally; it is rough at the back, and was probably applied as surface decoration. The minute model celt (14) made of polished blue paste, to serve as an amulet, is a curious evidence of the charm supposed to be attached to rude implements.

54. An interesting find of jewellery of the first century A.D. was made by some Arabs digging while I was at Naukratis. It was uncovered in the south-west of the town, at a high part, lying in the loose dust among the houses. Unfortunately the lot was divided among the finders before I got a part of it; and my purchase has been further subdivided between Bulak and London. Thus what is here shown was a small part probably of the whole. On pl. xxvii. will be seen part of a gold band intended to be sewn on to a basis of leather or stuff; it bears the name of Tiberios Klaudios Artemidoros; and this shows that it belongs to some twenty or thirty years after the accession of Tiberius at the earliest, or after 40 A.D.; while the workmanship appears to be too good to be placed more than a century after that time. Most likely it would be of about 70 A.D., as a middle date to assign to it. The figures in this gold band are in high relief, embossed in one piece from the band, and with the details as sharp in the hollow as on the outside. The first figure, the head of Helios radiated, is the highest in relief, the head being as deep as it is wide; the next figure is Hygeia with the patera, veiled, but with a serpent's head, instead of holding a serpent—a

truly Egyptian variety. The next figure is Ceres, with her usual torch, and ears of corn on the head. The central figure seems to have been Juno. From the three goddesses, and the nature of the ornament, it seems most likely to have belonged to the wife of the man named upon it; and the other objects are distinctly feminine. The gold chain is made of rings of gold wire folded over so as to make a figure-of-eight link, as shown in the enlarged sketch: the pattern around the central boss is made, as shown in the enlargement, by rolling the wire under edges more or less sharp, so as to nick it in all round. The object at the bottom of the plate is a shell of thick sheet gold, probably for holding unguents or perfumes. The discs and cones of gold foil, down the sides of the plate, were probably strung on threads hanging down the sides of the face, as pendants from the head-dress. Besides these a mirror case of silver (pl. xxviii.) was found, with the end of the solid handle ending in a serpent's head. Pieces of the bronze mirror which was inside the case still remain, entirely turned to green carbonate. The two serpents, Isis and Osiris, or rather Serapis, were the ends of a pair of silver bracelets, broken up by the Arabs. It is curious that the Serapis cobra is so much smaller than the Isis; but a difference is often to be noticed in the sizes of the two cobras of a pair, when represented on scarabæi, and so distinct is this that I had suspected that it was intentional. The other fragments on pl. xxviii. are pieces of a silver disc, and three cup-shaped pieces probably from head-pendants, like the gold discs. Besides these things, I obtained with them a fine flexible woven wire gold chain, of the 'Trichinopoly' pattern; a triad in embossed sheet gold of Isis, Nebhat, and Horus, with loop at the back for suspending it; and a piece of a charm written on gold foil. These were selected at Bulak. I also heard of a gold figure weighing seven napoleons found with these, and sold to an Arab dealer; and we can hardly doubt that the other half of the gold band, the other half of the gold foil charm, and the remainder of the gold shell, have likewise disappeared, along with some other whole articles. I only succeeded in encouraging the man whose share I bought to produce it to me, by buying the silver mirror case for a couple of francs one day, as he did not know the value of it; the next day I called for him and paid him sixteen more, telling him it was silver, and asking if they had anything further; after a little fencing, I succeeded in getting what I have described, paying rather over the value of the gold. The finders were entirely apart from my own men, and working at a place which I had not touched.

55. Coming now to the pottery of Roman times, the largest general find was in well 96, outside of the temenos of Apollo, on the north-west. Most of the forms there found are shown in pl. xvii. 1 to 16. The reason for attributing these to Roman times is the presence of terra-cotta figures such as probably belong to the first century A.D.; a figure of Bes, another of Horus, perhaps connected with Khem, and a piece of a figure (fig. 13), are apparently of this age. The pottery is much of it of a rough soft red, rather fine in the grain. The small dishes with a handle (15) are peculiar; and the fragment 13 is part of an interesting representation of a man watering a garden by means of working a tread-mill wheel, from which ropes descend into a well to raise the water, probably by a chain of buckets. The feet of the man may be seen on the steps, and the woodwork and its nails are plainly shown; the hollow beneath the wheel probably represents the water-trough into which the buckets emptied themselves. A complete figure of this kind in the British Museum shows the man standing in a vineyard, holding on by the trellis of a vine, from which bunches of grapes are hanging, while he treads the wheel. It is labelled "Satyr carrying bunches of grapes." The jar (fig. 1 on pl. xvi.) is from another well just inside the west wall of the temenos, found with other pottery there. The vase (fig. 2) is from another well at the north side of the temenos.

The wells found about the Apollo temenos have been good sources of pottery, as jars lost in them have not been broken by the fall, and many very likely have been left behind by the breaking of a cord by which they were let up and down, when they were being raised full and heavy from the surface of the water. The wells were lined with rings of pottery, seven or eight inches high, and with foot-holes in the sides. This form must have lasted for a long time, as well 100 contained pottery of the sixth century B.C. (pl. vi. 2); well 101 contained fragments of archaic statuettes; and in well 96 the Roman pottery above noticed was found.

A large branch of Roman pottery is that of the lamps; over 280 of these were found altogether. The proportions of different patterns were thus:—about 200 late patterns, Ptolemaic and Roman; 31 of the very massive, heavy form, with wide opening on the top, rather a spouted dish than a lamp; 6 of the pivot form, the same dish-type with a raised cone in the middle, in some cases high enough for the lamp to balance on a point beneath it, like a compass needle; 12 of the prototype of the above, a dish lamp with an open central tube rising higher than the sides of the dish, in fact a ring-shaped vessel—this was evidently for supporting the lamp on a spike or stick; 32 of the little flat dishes pinched in to form a spout; these are always of roughish red and brown pottery. The central tube lamps are the oldest apparently, and belong to the middle of the sixth century B.C. This type afterwards had the tube closed in at the top, and so formed a pivot lamp, a type which did not last long, but belongs to the sixth century. These were, I think, succeeded by the open dish lamps which often retain a rise or cone in the middle as a survival of the pivot type, and are massive and heavy, of close fine-grain pottery like the archaic. The pinched up flat dish type (which we called the "cocked-hat lamps") are not apparently early, as they have never been found in early strata, and they are of the later style of pottery. Finally, the closed over lamps, with a small hole at the top, drove out all other varieties, and degenerated into the frog and palm-branch lamps of the Christian period. These last seem to have been developed from the "cocked-hat" type, as I got in Alexandria a cocked-hat lamp, with a cover inserted well within the edge of the sides, to prevent the oil spilling, and perforated with one small hole at the top, and another facing the pinched-up spout of the cocked-hat to let the oil flow up to the wick; this lamp has a handle opposite the spout, and it is clearly only a transition form (now in the British Museum, Egyptian, &c. Dept.). It should be observed that the most complex lamps, those of the central tube type, are the earliest, and that they simplified as things went on; this is explicable from their being developed from a metallic prototype, like the early Greek vases and their handles, which are plainly imitations of bronze work, and this first form would be one more suited to metal than to pottery.

Another frequent class of objects are the cake-stamps; they are made of roughish red-brown pottery, and seem by their style to belong to the later Ptolemaic and Roman periods. The types (see pl. xxix.) are very varied, but have often some reference to eatables.

On the eastern side of the town, in the high unexcavated part, a factory of brown terra-cotta figures of Roman age was found; thus a number of pieces were shown to be of the same age, which is about the end of the first century A.D. apparently. The figures are varied: a draped female figure holding a child on her arm; a female figure with a large overshadowing head-dress, and her drapery raised up to her waist; a grotesque female figure, undraped, squatting; a figure of a man with a basket on his arm; toy boats, with half decks at the ends, and a shelter in the middle; toy shields; toy daggers, one with lions' heads on the handle; and a toy sheath fitting one of the daggers; the top of a lamp, circular, with six feed-holes in it; and pieces of late painted pottery.

The latest degradation of Greek vase-painting at Naukratis is of a stage scarcely known before.

One piece of white and buff figure on black ground is ruder than the worst yet known; and the rough red pottery of the Roman age is covered with debased scrolls, sprays, and leaves, painted on in black and white, which have an evident parentage in Greek art. One of the most curious developments was the use of *appliquée* figures: before the entire debasement of art, one example shows that such were finely designed, on a large scale, on vases, and painted red and black; but later, probably after the first century A.D., a hideous style prevailed of ill-defined small figures stuck on to vases, and thickly and coarsely painted in red, purple, black, and white; they recall the work of the end of the second and beginning of the third century more than anything, and may well be of that age. The subjects are children, mænads, furniture, &c., and are often indelicate.

One piece of late architectural work was found by accident, up in the Roman level. It is a capital of a pilaster, of florid and debased style, with the higher relief of it added in plaster, as the very soft, friable Alexandrian limestone would not bear undercutting. It is now in the British Museum.

CHAPTER VI.

THE PAINTED POTTERY OF NAUKRATIS.

By Cecil H. Smith.

56. Mr. Petrie, in his paper upon the general aspects of Naukratian pottery, has already shown us what is to be learnt of the different fabrics there represented from the circumstances of their provenance in relation to each other; it remains for me to say a few words as to the position of the painted fragments in the general history of Greek painted vases.

No other branch of archæology has probably made so rapid an advance into importance as this has done within the past ten years or so; the mythological interest of the black and red figured vases is of course no new thing; but either because the importance of all other material was underrated, or because in more recent discoveries richer stores of this material have come into our hands, it has been reserved for this decade to realize for the first time how much light may be thrown upon the history of the Hellenic race by these otherwise insignificant witnesses. The vases with black and red figures, although numerically the most imposing in every collection, are in reality the least in importance from an historical point of view, because they belong to a time which is already amply illustrated by abundance of other documentary evidence; moreover, these two centuries or so, from 500-300 B.C., are in reality but a small portion of the field which vases cover; what, for example, do we know of the fascinating dark ages before the Persian invasion; of the beginnings of Hellenic art and life; and of art in Greece before the Hellenic nation existed; as we go further and further back, actual documents of these remote times become more and more scanty, until at last we are left, as Tiryns shows us, with vase paintings as almost the only living testimony of those shadowy peoples whose traces linger in the pages of Herodotos and in the wondrous "Cyclopean" masonry.

The study of vases is then still growing, or rather perhaps I should say, just beginning to grow; and all fresh contributions of evidence are of great importance, whether they confirm, or, as must often be the case, upset our preconceived ideas; in order therefore to save ourselves from wasted labour, we cannot be too cautious in distinguishing suggestions or theories from proven facts. It is necessary to premise this warning, because in speaking of the vases of Naukratis we are dealing with a mass of material which is after all fragmentary, and which is at the same time most tempting in its suggestiveness; there is scarcely a single complete vase in the collection, and very few among the painted vases which give us the important datum of shape; as I have several suggestions to make, I should wish then that my remarks should be considered merely as suggestions, and as subject to modifications

which may be found necessary when fuller results are brought to light in further excavation.

Here is a case in point; various classes of objects are discovered in the Greek islands and on the coast of Asia Minor which show decided traces of an Egyptian influence; Græco-Egyptian Naukratis is found, a great trading centre which undoubtedly had intimate relations in antiquity with these very sites; and we are at once tempted to refer all the Egyptizing influence in early Greek art to this newly-discovered origin. No doubt for the faience ware and scarabs of Rhodes, and possibly for much of the early pottery, this conclusion may be perfectly correct; but as regards Egyptian decoration on vases, the lotus pattern for instance, we must bear in mind that both Greece and Asia Minor were conversant with Egyptian art long before Naukratis was thought of. Besides, at a site like Naukratis, where clay must have been difficult to obtain, we should naturally expect that the vases of different styles would represent, not so much local manufactures, as the importations of the very mixed races who went to form its population.

The fact is, we really know as yet very little about the original *locale* of any style of vase paintings; we may speak for convenience sake of the Kamiros style, the Dipylon style, and so on, so long as it is clearly understood that these names are only so applied after the sites where the vases of the class were first found in any quantity. We cannot even say that the Kamiros vases were made in Rhodes at all, especially as Naukratis has furnished us with a large variety of fragments of this very class. It will be impossible to speak definitely on these points until every important site, especially such as those in Krete for instance, is thoroughly and systematically explored.

After all, the evidence of find is more important than that of origin; and here at Naukratis, thanks to Mr. Petrie's careful memoranda, we have much that will be valuable in future investigation. As regards the dedicated objects, however, I think we must be careful before accepting too absolutely their date from the level in which they were found; if, as I suppose, they represent the votive objects which were from time to time rejected from the temple on account of surplus accumulation, or, as in the case of the Phanes lebes, for political or other reasons, the evidence of level and accompanying styles goes for very little; inasmuch as any vase might in point of date be separated by a century or more from those among which it is found.

57. The practice of dedicating fictile vases in temples must have been fairly common in antiquity, and yet we have singularly few examples which testify to this custom; partly because few explorers have been fortunate enough to discover the temple "limbo" as Mr. Petrie has done;[1] more usually no doubt, as we see from the Delphian and Delian treasure lists, and from the excavations at Dodona, the actual temple service must have been of metal, and the insignificant character of most of our specimens is probably the cause of their having been chosen for rejection. At the same time, the character of most of these inscriptions would seem to show that the scribe, whoever he was, had but scant courtesy for the painter's art; for they are scratched haphazard in many cases all over the design.[2]

Now many of these inscriptions, it will be noticed, are not dedicatory, but merely mark possession, thus *Ἀπόλλωνός ἐμι*, or merely *Ἀπόλλωνος*.

[1] See the instances of so-called *favissæ* quoted by Furtwängler, "Beschreibung der Vasens." Berlin, p. 47 and *note*. In the stores of the British Museum I recently came across a fragment of a large black-glazed dish inscribed in roughly incised letters . . . . ΑΤΑΙΔΑΜ . . . which seems to have come from Knidus. It looks very much as if we should read *ἡ δεῖνα*] *τᾶι Δαμ*[*ᾶτρι*, in which case we have here probably a relic of a *favissa* of Demeter. The recent discoveries at the temple of Apollo Ptoos in Boeotia have furnished yet another parallel case. Here a quantity of fragments of painted vases were found, many of them bearing incised votive inscriptions of the fourth century B.C.; others are inscribed simply ΗΙ, apparently an abbreviation of Ηι[*ερόν*: see *Bull. de Corr. Hell.* ix. p. 479 and p. 523.

[2] The lekythos of Tataië (Roehl, *Inscr. Ant.* no. 524) is treated in this way: on the other hand, see the cup of Philto, *Hellenic Journal*, vol. vi. p. 373.

May it not be that the inscriptions were in most of these dedicated objects only put on by the temple officials as a final act before burial, in order that no sacrilegious person should in after times be so misguided as to apply to his own use what was thus unmistakeably marked as belonging to Apollo? This would explain a great deal that is otherwise unintelligible about these inscriptions; the striking contrast for example, between the studied calligraphy of the Phanes rim on the one hand, and on the other hand, the clumsy and seemingly hurried scratching upon the painting in pl. vi. no. 5, which is nevertheless part of what must have been a very fine vase. Looking moreover at nos. 1 and 2 of the same plate, where the inscription has evidently been inserted by the dedicator himself, observe how careful the scribe has been not to let the writing interfere with the design. What I wish therefore to point out is, that we must in these inscriptions distinguish between those which contain the word *ἀνέθηκε*, or a dedicator's name, and are therefore probably about contemporary with the manufacture of the vase itself; and those which, merely marking the ownership of the god, may have been added, at the time of their rejection, by the officials of the temple; and which in that case may represent a period much later than the actual origin of the vase.

On the whole, the evidence of these Naukratian inscribed vases is strongly in favour of what I have always felt to be the case, that painted vases among the Greeks were seldom or never used in daily life; they were a special fabric made expressly for dedication, or, in the case of those who could afford them, for burying with the dead; besides, if they had been in daily use, how could we possibly fail to meet with any mention of them throughout the whole of Greek literature; the only instance in which they are mentioned distinctly states that the class there referred to, the white "Athenian" lekythi, are made expressly for the dead; Aristoph. *Eccl.* 996, *ὃς τοῖς νεκροῖσι ζωγραφεῖ τὰς ληκύθους*. It is true, I allow, that many cases are known (several among the Naukratis collection) of painted vases which have been rivetted in ancient times; but the precautions against tomb-robbing in antiquity, and this very practice of incising deterrent inscriptions[3] shows that the question of a second interment of a vase might, and probably did, often arise; and we know only too well that objects buried with a body were as a general rule broken before being put in the tomb. A vase thus anciently mended may then either have come from a tomb or may have been broken in the factory and, mended there, would be purchased at a bargain by the pious but economical relative of the deceased.

58. Glancing now generally over the large series of painted vase fragments from Naukratis, we are dealing with a period from 650 B.C. if we may accept Mr. Petrie's date, downwards to the Christian era; and within that period we have representatives here of almost all known, and a few hitherto unknown, fabrics that existed in the Greek world. This in itself is a valuable fact, because we may naturally conclude that what is not here represented was probably out of the ken of the Naukratians in point of date; and therefore we may, I think, look upon Naukratis as a *terminus ante quem;* just as, on the other hand, the Akropolis of Tiryns gives us a *terminus post quem*, if we may consider the date of its destruction as fixed, by Dr. Schliemann's discoveries, at about this period; at any rate, whereas at Naukratis there is none of the so-called "prehistoric" pottery on the Akropolis at Tiryns, according to Dr. Schliemann, no single specimen was found which can be referred to the Hellenic period.

And this date for Naukratis is interesting, because it practically fixes two classes of vases at least, as earlier than 650, I mean the vases of the "Geometric" style and the so-called "Island" type. It is certainly a remarkable thing that we have not in the whole of the Naukratis collection

[3] The Tataië lekythos says, "whosoever steals me, shall be blind."

a single instance of the "Geometric" type of decoration; in spite of the comparative proximity of Cyprus, its acknowledged home, and in spite of the fact that at Rhodes, so closely connected with the manufactures of Naukratis, these vases are not unfrequently found; the only instances before us which at all recall it are two fragments of a brown bowl on the exterior of each of which is a bird treated in the "Geometric" method, its body filled with hatched lines; in both these cases however, beside the bird is a rosette, and the reverse side of the vase is covered with a comparatively late black glaze, decorated with the inevitable white and purple lines, showing it to be probably of Naukratian manufacture: these pieces are evidently imitations of the "Geometric" style made much later than the archaic period to which they apparently belong. The same remark applies to a fragment which represents part of a frieze of women joined hand in hand; it at once recalls the fragment of a similar composition published in Schliemann's "Tiryns," pl. xvii, a; only here, though the drawing is extremely rude, and the eye indicated by a square space with a dot in it, white colour and incised lines, both unknown in the true "Geometric" style, are employed; the piece reminds us of those provincial imitations of the archaic of which we have some examples from Southern Italy and elsewhere.

Similarly with regard to the "island" type; the well-known "top-shaped" form for instance, with the globular body and the vertical spout and double handle, of which so many have been found in the islands, and which is typical of its class (see "Tiryns," p. 138, fig. 57). Several of these have been found in Egypt, and we might naturally suppose that if they had existed in Naukratian times we should have found them here, but as yet no such vase, nor indeed any specimen of this type has been discovered.

59. There is, however, one class of undoubtedly early ware which I am particularly interested to find at Naukratis; in the *Hellenic Journal*, vol. vi. p. 188, and note 2, I mentioned a series of vases from Rhodes of which the clay is black all through, with particles of some shiny mica-like substance in its composition; these are covered with a metallic brownish-grey glaze, and are painted with decorations in scarlet or purple and a colour which has usually faded, but which seems to have been white; thirteen of these were included in the recent Biliotti sale of antiquities from Rhodes, and are briefly described in my Catalogue of that collection, nos. 2—8. I there ventured to call them the "Polledrara" style, because the great Polledrara hydria in the British Museum (Micali, *Mon. Ined.* pl. iv.) may be considered as the most important type of that style; on it we have represented in polychrome colours and in an evidently Egyptian dress the Greek myth of Theseus and the Minotaur; the usual patterns on the other vases of this style are the lotus and Mæander; and when we remark the tendency everywhere prevalent at Naukratis to polychrome decoration, and the Egyptian character of the "Polledrara" ornament, I think we have fair ground for assigning this fabric to a Naukratian origin.[4] From the "Diary of Excavations in Rhodes" I gather that this ware is usually there found with early objects of Phœnician workmanship; judging from this, and from the archaic character of the other objects from the Polledrara tomb, I should say that this is the earliest of the fabrics represented at Naukratis.

60. We now come to the large class of vases included under the general head of the so-called "Oriental" style, and of which Naukratis has supplied us with an immense quantity of examples. The prevailing decoration in this style is by means of horizontal friezes of animals, arranged sometimes singly, or sometimes as many as four or five, one above the other; the figures are laid on in black or brown on a yellowish clay, and the field is more or less filled with geometric patterns or rosettes.

[4] One fragment of this ware, from the temple of Apollo, decorated with patterns in a rich red colour, was sent to Boston; it is no. 1 of my Catalogue of that collection.

It has already[5] been remarked, among the instances found at Rhodes, that this style divides itself naturally into two distinct classes; on the one hand we have (A) what we may perhaps for convenience term the "Assyrian" style, from its resemblance to Assyrian textile decoration; here the treatment is extremely conventional, the animals (almost always the lion, bull, or goat) elongated out of all proportion, the field filled, and usually crowded, with rosettes, and the use of incised lines (see pl. vi. nos. 3 and 5); on the other hand is (B), a class in which no incised lines are used, and the artist (see pl. v. nos. 20, 25, 52) is in consequence forced to leave certain portions of his figure in outline; the field is less crowded, and is as a rule occupied with geometric designs; the figures are less conventional, and fresh animals are introduced, as for instance the Egyptian goose, for which reason we may for our present purpose call it the "Egyptian" style.[6]

Now of these two styles, I think we may for many reasons consider B as the later; its whole character seems to mark it as the result of an imitation of Assyrian textile work by artists accustomed previously to Geometric traditions; of this Geometric tendency we see numerous traces, e.g. in the decoration of the bodies of the swans on pl. iv. no. 3, which is clearly a reminiscence of the Cypriote birds of this style; and just as in the Geometric style, the artists are accustomed more to the metope system than the frieze, so in this (B) class we often have the frieze artificially broken into squares by vertical lines. It is true that in most cases the examples of class A would seem at first sight rather the later of the two, because of their conventionality and the appearance of a more florid and degraded style; but this would be quite accounted for if we imagine the existence, long before Naukratis, of an Asiatic vase-fabric imitating the decoration, itself long pre-existent, of Assyrian textile work, in connection with which it is interesting to note on pl. vi. 3 (an example of class A) the two lions with raised fore-paws,—a specially Phrygian scheme with which Mr. Ramsay's discoveries and the gates of Mycenæ have familiarized us.

Whether or not this style (B) has its origin in Naukratis, it is impossible to say in the light of our present scanty information; we may, however, remark that on the special "Naukratis" fabric, with which I shall presently deal, portions of friezes occur (*e.g.* pl. v. no. 52) treated in the method of style (B), none in that of style (A). On the other hand there is a fabric combining both styles, of which we have several examples, and which, I think, must be of local manufacture; unfortunately, no specimen of this is represented in our plates, but I have published an example from Rhodes in the *Hellenic Journal*, vol. vi. p. 186, fig. 3. The type is always the same; the upper frieze is always of class (A), the lower of class (B), and in every case the distinctive characteristics of both classes are faithfully preserved. This mixed style I believe to be Naukratian for this reason, that in every case where it occurs there is always found a peculiar decoration consisting of a thin purple line between two lines of white, all laid upon the black glaze.

Now in all early vases hitherto known from other sources the use of white pigment is rarely, if ever, found; at Naukratis, on the other hand, we find it employed from the earliest times; we have it on the "Polledrara" vases, and no doubt to workmen accustomed to the white glaze of faience work at the scarab factory and to the groundwork of Egyptian paintings, the application of some such decoration to fictile art would naturally suggest itself. Hence we find it employed both on the groundwork of the local fabric, and also in connection with purple in the decoration of pinakes, such as pl. v. nos. 1—10, which are obviously imitations of the Egyptian faience bowls with lotus decoration. In many of these examples the thin bands of purple and white are used, and it would seem that their use must have

[5] *Revue Arch.*, new series, vol. xliv., p. 348; and *Hellenic Journal*, vol. vi., p. 188, and note 2 *ibid.*

[6] Mr. Murray in his article in the *Revue Arch.*, already quoted, calls it the "Dorian" style.

lasted as long as vase-painting at Naukratis was carried on, wherever a black ground was given suitable for their application.[7]

61. The fabric which I would call "Naukratian" *par excellence*, was, I believe, previous to Mr. Petrie's discovery, unknown; its characteristics are noted in Mr. Petrie's list, on p. 18, under class F. The exterior is usually coated with a creamy, white engobe, on which the decoration is laid in black, tending to brown or orange, sometimes with accessories of purple; in the earlier examples, in default of incised lines, portions are left in outline to indicate detail; in the later examples incised lines are introduced; examples are given on pl. v., *e.g.* nos. 38, 52 for earlier, nos. 41, 42 for later; on the reverse side is generally a black glaze decorated with lotus or other patterns in white and purple. If we wanted any other evidence to ascribe this fabric to Naukratis, a convincing proof is given in the example on pl. v. no. 37, which was found on the supposed site of the temple of Aphroditè; here the dedication to the goddess has been painted previous to firing the vase, which seems to me conclusive evidence of its having been made on the spot; we may also remark the two negro types on pl. v. nos. 41, 42, which can only be portraits of the inhabitants of the Upper Nile-valley.

When we consider the association with Naukratis of this early white-faced fabric, we are naturally led to expect traces of some such influence in the later development of this fabric; in the British Museum collection there are about eighty specimens with black figures on a white ground, of which a large proportion come from Rhodes, an island which, as we have seen, was closely connected in its vase fabrics with Naukratis. Now among the vases of this class from Rhodes are a series of *alabastra* with a design which must at any rate have been suggested by an African original; one specimen, found at Kamiros, and now in the British Museum, is very fully published by Fröhner, "Deux peintures de Vases Grecs," Paris, 1871, no. II.[8]; it represents an Amazon in a very curious costume, consisting of a cuirass over full *anaxyrides*, holding in one hand a battle-axe, in the other a piece of curiously ornamented drapery, standing beside a palm-tree; this is, however, evidently the adaptation of an Amazon type suggested by the similar type of which he gives (*ibid*, p. 16) a representation; here is a figure in precisely the same dress and attitude beside a palm-tree and holding outstretched the same object in each hand; but in this case the hair is woolly, *οὐλόθριξ*, the face is black, and of a type which corresponds very much with that on pl. v. no. 41, and which leaves no doubt that an Æthiopian is here represented. M. Fröhner in his memoir has collected no less than four examples in which this negro type is identically represented; to his list I may add three others, viz.:—

5. Purchased by the British Museum in 1875, said to come from a tomb at Tanagra; as Tanagra provenance is notoriously doubtful, this may be perhaps the one mentioned by Fröhner as formerly in the Parent collection.

6, 7. Two from excavations in Rhodes, sold at the Biliotti Sale; (no. 193 of my Sale Catalogue); in the second of these the negro has a *pelta* from which the usual shawl hangs, and the small table, which occurs in all other examples of this type, is wanting.

Considering how unusual it is to find repetitions of any scene in vase-painting, it is certainly strange to meet with so many examples of this uncouth figure: the palm-tree, the negro type, and the broad trousers, striped or spotted, different from the ordinary Amazonian *anaxyrides*, as well as the

[7] See "Tiryns," p. 118, no. 28.

[8] The other Kamiros vase in this memoir (no 1), now in the British Museum, also suggests a connection with Naukratis or the neighbourhood. It is a lekythos with a polychrome decoration on a white ground, representing a couch, above which the Dioskuri are riding in air. Now the Dioskuri had no special association, so far as I am aware, with Rhodes; while at Naukratis, on the other hand, as Mr. Petrie's excavations have shown, their cult was considerable from early times. The *technique* of this vase, and the introduction of the branches of silphium upon the couch in the design, would suggest the possibility of a Naukratian origin.

technique of the vase, lead us to Naukratis; and, finally, we have the shape, which is in every case that of the *alabastron*. Now these negro designs are to all appearance the earliest example I know of the application of design to this shape in fictile art; the shape is of course directly imitated from the vases of alabaster, of which Mr. Petrie found traces of the manufacture in Naukratis; it seems reasonable therefore to suggest that both the shape and the design of this series of alabastra with negro types took its origin in that city.

The earliest master's signature which is found on a vase with black figures on a white ground is that of Nikosthenes (see Klein, *Vasen mit Meistersig.*, p. 30, nos. 43, 44), and arguing from this and from the evidently inventive genius of that artist, Loeschcke has suggested (*Arch. Zeit.* 1881, p. 35) that Nikosthenes was the introducer of this fabric into Attika, where it was brought, as he says, in order to give a new impetus to the already worn-out black figured style. This theory is of course no longer tenable, now that we know the white ground vases were in existence long before even the beginning of the black figured style; it may be locally true as regards their introduction into Attika, but it remains yet to be proved that Nikosthenes was an Athenian; certainly his choice of subjects would not lead one to suppose so, any more than the strange metallic forms of his vases; his whole style, as indeed the provenance of specimens bearing his name, argues rather in favour of a provincial origin. And it is interesting to observe in this connection that we have from Naukratis several traces of this prolific artist; a series of several necks from *kraters*, of exactly the same form and style of decoration as the Nikosthenes *krater* in the British Museum (Klein, no. 42); a fragment of the neck of an *Amphora*,[9] with the usual Nikosthenic scheme of the two boxers, and which can hardly have been painted by another artist; a fragment of a *kylix*, with an elaborate scheme of decoration identical with the decoration on Klein, no. 27; and finally, the stem of a *kylix* of red clay, around the ὄμμα of which is inscribed ΝΙΚΟΣΘ . . . . . ΕΝ. *Νικοσθ[ένης ἐποίησ]εν.*[1]

Nikosthenes is moreover one of the first, if not the first artist who employs the colossal eyes to decorate the outside of cups with painted scenes. Mr. Petrie's discovery of the early brown dedicated bowls, of which the only decoration is by means of large eyes on the exterior, suggest that this use of eyes, so frequent among the red-figured *kylix* painters, may have been imitated from the same dedicatory brown bowls in Naukratis; the idea of which may itself have been borrowed from the sacred eyes of Osiris manufactured in such large quantities by the scarab factors of Naukratis. The eyes that appear on the celebrated Kamiros pinax, above the combat of Menelaos and Euphorbos, may be an earlier application of the same principle.

This style of painting on a white ground seems to have disappeared at Naukratis after the Persian invasion; at any rate, in the collection before us there are only three fragments which can be referred to a later date; these are three fragments of probably about 450 B.C., in the fine style of the Athenian polychrome lekythi, and are probably of Athenian workmanship; they seem to be parts of kylikes; and are as follows: (1) *obv.* the right foot (sandalled), and the hem of the dress of a figure moving rapidly to the right; the hem is wavy, and on the left is the head of a dolphin plunging downwards; the design recalls the rape of Thetis on the Kamiros vase (*Journal of Philology*, 1876, p. 215), and is probably part of a representation of this subject; *rev.* unintelligible. (2) *obv.* the hindleg and foreleg of a bull, which seems to have fallen on the ground with its legs bent

[9] Boston.

[1] It may be worth while to note that among the fragments from the Apollo temple is part of the base of a bowl of reddish unglazed ware, on the base of which is incised ΓΑΝΦΑ; it may be merely a coincidence that the forms of the letters are exactly those used in the well-known signatures of the potter Pamphaios.

[2] See Murray, *History of Greek Sculpture*, vol. i., p. 159. On two dishes from Kamiros with a stem is a scheme of decoration similar to that on these so-called eye-bowls, with vertical lines dividing the bands in which the eyes are painted.

beneath it; perhaps from a contest of Herakles with the Kretan, or Theseus with the Marathonian bull (below is a fine pattern of egg moulding); *rev.* part of a contest showing the spears of two figures and the scabbard and leg of the figure opposed to them. Both these designs are in a brown outline. (3) A beautiful head of a female figure to right with part of the left arm, over which a *himation* passes, coloured a deep blue-black with accessories of purple and white; the *technique* is like that of the Nesidora cup in the British Museum; *rev.* part of a leg, scabbard and lion-skin, probably belonging to a figure of Herakles—beside it [KAL]OΣ.

62. There is one more style of vase-painting which offers an interesting .problem, and upon which Naukratis throws valuable light. There is in the Cabinet des Médailles at Paris a vase which for a long time remained the isolated example of its class; it is a kylix with polychrome figures on a white ground, representing in the interior Arkesilaos, king of Cyrene, weighing silphium. In an article in the *Arch. Zeitung*, 1881, p. 215, Puchstein collected all the then known vases of this type, and pointed out the strongly-marked Egyptian character which pervades the entire series; taking the Arkesilaos cup as the central point, he fixed upon Cyrene as the *locale* of this fabric, both on account of the intimate relations of Egypt with that town, specially under the reigns of the Battiadæ and Amasis, and also because Cyrene was then the only Greek colony near Egypt from which vases had been obtained. On the other hand, all the arguments Puchstein brought to bear would tell equally in favour of Naukratis; the Egyptian character of the details, and the intimate relations of Cyrene with Egypt and therefore with Naukratis. Amasis married a Cyrenian, but then Amasis was also the special protector of Naukratis. So that it is not suprising to find a fine example at Naukratis of this so-called "Cyrenian" ware; it is represented on pll. viii, ix.

In this vase, as is usual in the so-called "Cyrenian" style, the picture occupies the whole of the interior, of which the entire space is prepared with a white engobe; the exterior is as usual decorated with a conventional frieze of animals, painted in black and purple on the natural reddish colour of the clay; the ornament is exactly what we have in the specimens collected by Puchstein. What the interior scene is intended to represent it is impossible to say; the central space is occupied by a large tree extending over the entire height of the design, towards which a number of winged figures on each side are flying. These winged figures are already familiar to us from Puchstein's examples, in which they are often introduced with apparently no reference to the action going forward. In some cases they wear Egyptian head-dresses, and it would seem as if most of these designs were mere travesties, or at any rate reminiscences, of Egyptian wall-paintings by artists to whom the originals conveyed no meaning. Now on one example of this fabric in the British Museum, which was found at Kamiros, and which is not included in Puchstein's list, the exterior is decorated with lotus, the interior with a design in the familiar Naukratian style of purple and white upon a black glaze; which would argue in favour of a Naukratian origin. On the other hand, among the so-called Cyrene vase paintings a number of vases are depicted, and if they were made at Naukratis we should expect that these pictures would recall shapes known from Mr. Petrie's discoveries; but not one of these shapes can be identified, neither do we find in the Naukratis collection a single other specimen which can be assigned to this style. On the whole, then, I think we must let the term "Cyrenian" remain until we obtain more decisive evidence on this point; we must recollect that in the excavations hitherto conducted, the older Cyrene has not yet been discovered; when this site, wherever it may be, is thoroughly explored, we shall probably be in a position to decide more definitely both with regard to the so-called "Cyrene" ware as well as many other of the different fabrics found at Naukratis.

The remainder of the collection calls for little comment; but it is interesting, in the light of the

Melian inscriptions, that we have one fragment of a vase in the style which Conze (*Melische Thongef.*) has called "Melian." On it is represented in the archaic manner similar to *Ibid*, pll. i—iii, a rude representation of a human figure grasping in both hands some weapon, upon whom a colossal hound or wolf is rushing.

Mr. Petrie has already called attention to the comparative scarcity of fragments which can be assigned to the period immediately following the Persian invasion. From that time downwards the only fabric that is of special interest is the very late ware with subjects in relief; and of these the fragments are too scanty and the subjects too unintelligible to make much of without a further supply of examples with which to compare them.

CHAPTER VII.

THE INSCRIPTIONS.

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63. The excavations of the past season at Naukratis have proved extraordinarily rich in the number of inscriptions that they have brought to light, as will be seen from a glance at the plates (xxx. to xxxv.) upon which these inscriptions are reproduced. By far the greater number of them, some 700 in all, were scratched with a sharp point upon pottery of various ages and styles; but a large proportion of this number, comprising only monograms or unintelligible fragments, can hardly be used for any scientific purpose. The remainder, however, containing mostly dedications to Apollo, form a connected and consistent series of the utmost value to the epigraphist, for since they must date almost entirely from the period 650—520 B.C., they enable us to trace the history of the Ionic alphabet from its earliest infancy in a manner that has never before been possible.

While the results of the next season's work, which may prove, even in this respect, no less fruitful than the last, are still to be expected, it may seem premature to try to build any theories upon the facts now published. But though gaps may in future be filled up, a series is already before us from which much may be learnt; and while reserving till next year a fuller discussion of the fuller material that may then be at our disposal, we will at once endeavour to briefly sketch out the results likely to be gained by the science of epigraphy from the discoveries at Naukratis.

In dealing with the archaic inscriptions found in the temenos of Apollo, we meet at the outset two or three problems which must be solved before it is possible to make any further progress. For, until we have decided in what way certain of the earliest inscriptions are to be read, there is no foundation on which to build a history of the earliest Greek alphabet at Naukratis.

64. The inscriptions with which we meet usually contain a dedication to Apollo, recording either the act of offering, *ἀνέθηκε τὼπόλλωνι* or *τἀπόλλωνι*, or merely the sacredness of the object, *'Απόλλωνος*. Such are the usual forms. But we find others beside these, the explanation of which is not at first sight so obvious; the most difficult, as well as the most important, occur upon the most primitive pottery, and in characters that by their forms seem to indicate the infancy of Greek writing. In no less than eight distinct instances we find the inscription *'Απόλλω* (or *Ὦ'πόλλω*)*σόν εἰμι* clearly visible or unmistakably indicated. In two instances are letters which seem best read as *'Απόλλω* (or *Ὦ'πόλλω*) *σο ἐμι*; i.e. *'Απόλλω σοῦ εἰμι*. There are two objections to these interpretations: (1) the form of dedication is peculiar, and, so far as I know, unparalleled; (2) the vocative form *'Απόλλω* is hitherto unknown. So weighty are these objections, that, were these inscriptions fewer or less clear, I should not venture to defend my interpretation.

Afterwards another inscription came to light which had previously been overlooked. This was on pottery of early style, the neck of a drab-buff vase with dark brown and red or purple ornamentation, in the style assignable to about 600 B.C. On this vase was clearly legible the inscription *'Από*]*λλω σός εἰμι*.

Now, taking all these together, we have no less than twelve instances of this form of dedication. This is too large a number to be explained away as the result of accident or mistake, and thus we are left to the conclusion that the intention of the writer has been duly expressed. Instead, therefore, of giving way to the two objections above referred to, it is necessary to meet them in the following manner:—(1) The peculiarity of the dedication consists merely in the combination of two forms, either of which alone is quite common. A god is often addressed in the vocative and second person, but by the dedicator; the object often speaks in the first person, but not to the god. Here the object dedicated speaks in the first person, and also addresses the god; a peculiar, but by no means incomprehensible form of inscription.

(2) The vocative *'Απόλλω*, if correct, is of extreme interest and importance to the philologist. Such a form would involve a nominative in *-ως*, accusative in *-ω* (well known in Attic), &c. Now Gustav Meyer, in his "Griechische Grammatik," § 323, maintains that in the case of many nouns, subsequently declined in the form *-ων*, *-ω*, &c., this form is due to false analogy, the earlier declension being *-ως*, *-ω*, &c. *'Απόλλων* is one of these, and the new vocative in *-ω* will tend to strengthen his view. So far, then, shall we be from setting aside the form as a mere blunder, that we shall thus be enabled to regard it as a valuable acquisition to philology, and a step gained towards the discovery of the still obscure and disputed origin of the name Apollo.

65. It will be well to dispose at once of another preliminary discussion. There is only one of our bowls which can be brought into relation with a known historical character, and so give independent evidence as to its date. This is the one dedicated by Phanes, the son of Glaukos (Glauqos), and it appears to have been the largest and most costly offering of its time, which was probably, from style, characters, and depth of discovery, the second half of the sixth century. Now among the most important of the Greeks in Egypt at this time was a certain Phanes, who deserted Amasis for Cambyses (Her. iii. 4) Hence we may conjecture that he was the very man who dedicated this bowl; its fragments were found extraordinarily widely scattered—a likely fate for the traitor's offering. If this identification be correct, then the early coin of Halikarnassos, the inscription of which has been read as *Φάνος εἰμι σῆμα*, may have been struck either by the same man earlier, or, more probably, by an ancestor of his; for the forms (closed *η*, three-stroked *ς*) of the letters on that coin certainly appear at least two generations earlier than those on the vase. But for the vase an approximate date of 530 B.C. (the treachery of Phanes was about 526) may thus with great probability be assumed, and a fixed point of great value gained for the arrangement of our whole series; for it includes but few that seem assignable to any much later period.

66. Another question next confronts us—a question of wider bearing and of greater complication, which cannot be treated separately from the inscriptions themselves—the question how far we may regard the inscriptions found in the Apollo temenos as a single consecutive series, and how far such differences as we find are temporal, rather than local. In the temple which, as Herodotos expressly tells us (ii. 178), the Milesians separately from the other Greeks consecrated to Apollo, we should naturally expect dedications to be inscribed in the Milesian alphabet. Such a view is fully borne out by the character of the inscriptions, which show the essential forms of that alphabet in a series of inscriptions stretching apparently without any considerable gap from about 650 to 520 B.C. It is hard to believe that the various stages of epigraphic development can have occupied a shorter period than this 130 years, and quite as great a change is visible in the fabric of the pottery that bears the dedications. If this view be correct, it will follow that Prof. Kirchhoff's estimate of the position of the

Abu Simbel inscriptions is no longer tenable, and that those inscriptions show a variation from the ordinary Ionic alphabet, as seen at Miletos and elsewhere, which is due to a difference of local source, and not to an earlier date. This conclusion is confirmed by the fact that we find at Naukratis among the early, but not the earliest, specimens of the Milesian alphabet, another where the letters are identical with those of the Abu Simbel inscriptions, and seem to be in all probability Rhodian. Therefore the specimen referred to will be treated separately in its own place, and the same course will be followed with regard to all other inscriptions that differ in any essential point from the Milesian series, whether they can or cannot be definitely assigned to some other local source.

67. Having thus explained the principles on which the selection and interpretations here adopted are based, we may next proceed, with the help of the accompanying table (pl. xxxv. *a*) to sketch the history of the alphabet at Naukratis from the earliest times. A word or two in explanation of the table may not be superfluous. Classes I.—XI., arranged, as far as possible, in chronological order, contain the connected series of Milesian inscriptions. Classes XII.—XVII. contain such specimens as differ in essential points from that series. XVIII. and XIX. represent two well-known and easily recognizable local alphabets; XX., such detached letters, &c., as could not, from their isolated position, serve as satisfactory evidence; only a few of these have been selected, which served to fill gaps in the columns of some letters. Classes *a*, *b*, &c., at the bottom, are not, of course, new discoveries, but are merely inserted for the sake of comparison. I may add that the forms of the letters in all the classes, from I.—XX., have been copied from the originals with the help of Mr. Petrie's facsimiles; but these last have in no case been used without independent verification. Class *a* is constructed from the copies by M. Dubois in the "Bulletin de Correspondence hellénique," vol. vi. pp. 187 sqq.; *b*, from Lepsius, "Denkmäler," XII. vi. 98, 99; *c*, from the originals in the British Museum, with the help of earlier copies made under more favourable circumstances. In each case only inscriptions of unquestionably early date have been used.

68. Herodotos, in the passage already referred to, after mentioning other islanders and Asiatic Greeks who consecrated sacred precincts at Naukratis, tells us that the Milesians thus dedicated one to Apollo: it is in this temenos that the inscriptions we are now considering have been found. But did the earliest settlers and visitors bring with them an alphabet already established at home, or was it the colonists who communicated the new invention to their mother city? In the scarcity of early Milesian inscriptions it is hard to give a definite and final answer to this question, for it is not till we are well advanced in our Naukratis series that we find ourselves on a level with the earliest inscriptions of Asia Minor. But, on the other hand, we find at Naukratis so little trace of Phœnician influence in other respects, that we must believe the Milesian merchants and sailors to have become acquainted with the Greek adaptation of the great Phœnician invention either at home or on their sea traffic. In any case, however, the forms represented in classes I., II., III., and perhaps IV., of our table bear so close a resemblance to the originals from which they were primarily derived, that we are compelled to regard them as among the earliest in character, if not in date, of all Greek writing hitherto discovered. Thera alone can here compete; but Thera is totally different. We must therefore acknowledge the existence side by side of two distinct branches of the most primitive Greek alphabet, classes sometimes conveniently but loosely distinguished by the names Cadmean and Ionic: but of the latter the Abu Simbel inscriptions will no longer be either the earliest or the most characteristic example. What then is the relation between the two classes? This is a most obscure and difficult problem, which it is, of course, impossible here to solve. But it is one that has hardly yet received sufficient attention

from epigraphists, and it now asserts itself with an urgency that cannot be lightly set aside. The two branches cannot be independent; derivation from a common source could never suffice to explain their coincidences of adaptation to Greek use. But their discrepancies, on the other hand, are such as can only be explained by considering that each borrowed directly from the parent Phœnician alphabet: no theory, therefore, can be tenable which does not in some way explain these apparently inconsistent facts. At present, however, we are concerned with the Ionic branch only, and in its case direct relations with the Phœnician become evident when we examine more in detail our earliest specimens. But how early are these specimens? Their exact date cannot of course be ascertained, but we may be able to gain some approximation after going through the whole series, and establishing the relative positions of the several classes; for the present it will suffice to say that they seem far earlier than the Abu Simbel inscriptions.

69. The letters assigned to class I. of the table are written upon two fragments of very early pottery, with a simple ornamentation of dark lines (3 and 4), in style similar to an amphora found beneath the burnt stratum, and therefore probably earlier than 650 B.C. The two fragments were found at the bottom of a well; hence no clear evidence from position can in their case be adduced. Here it will be seen that ι λ ο π ω, and once ε, are represented by the usual forms, but the other letters are remarkable. The inscription runs from right to left. The symbol for ε, as in class II., is turned over in one case on to its side, a position in which it is indeed found once in an Abu Simbel inscription, but at the turning-point of a βουστροφηδὸν line, so that the case is not really similar. It is, perhaps, worth noting that the Egyptian hieratic symbol from which the Phœnician is said to be derived has this as its normal position (cf. list in S. Reinach, "Epigraphie grecque," p. 180), a fact which may not have been without influence at Naukratis. Other peculiar forms are common to classes I. and II., those that represent μ and ς. The three-stroke μ is, so far as I know, completely new, but we have at least two examples of it, as to which no doubt need be entertained. Such a form would be probable anywhere, but for the fear of confusion with ν, which has in every other place led to the preservation of the fourth stroke: but if the earliest ν at Naukratis was that of classes III. and IV., the need of a difference disappears. But this ν on the other hand would render the three-stroke ς an impossibility, and accordingly we find that letter with the fourth stroke constantly added. The form of the σ calls for further notice: where it has the normal four strokes it is found lying on its back in the position of the Phœnician Shin, from which it is derived, the exact reverse of that of the Theræan Tsade (in the table, p. 181, op. cit. M. Reinach has transposed the places of these, probably unintentionally). The relation of these two sibilants is settled by the abecedarium of Formello (op. cit. p. 200), which however, represents a branch of the Greek alphabet different from the two already referred to, and which we must therefore leave out of the question at present: it is only mentioned to show how intricate are the questions of derivation and relationship that meet us at every turn. A more irregular and straggling form of the ς also occurs in classes I. and II., and can be paralleled both at Abu Simbel, in Amorgos, and in Lakonia. Before we pass on to the next class, it must be observed that a μ occurs in 305, which is identical with the Phœnician, but as the vase on which it occurs is of the eye-bowl pattern, and perhaps, therefore, not of extreme antiquity, too much stress must not be laid on its evidence for the earliest Greek characters.

70. The next two classes (III. and IV.) are remarkable for their forms of ν, identical with the Phœnician, but hitherto unknown in purely Greek inscriptions. Here then again a direct

influence of the Phœnician alphabet must be assumed, however and wherever that influence may have been exercised upon the traders of Naukratis or the sailors of Miletos. Unfortunately no ν occurs in the earliest two classes, but the form of μ there used seems to necessitate a ν such as that here preserved. The only ς preserved in class III. is so rough and careless that no stress can be laid upon its form. Though apparently resembling the ordinary three-stroke ς, it may just as well be a variation of the straggling form seen in class I. In class IV. the ς assumes the four-stroke form which thenceforth becomes the usual one. The next seven classes, from V. to XI., do not call for special or individual attention, except as regards the form of the ς in X. and XI., in which the three-stroke forms may be of comparatively late date—class XI. is certainly late, from the depth at which its specimens were discovered. This form may, therefore, be merely due to confusion or external influence.

71. We cannot so lightly dismiss the ς of classes XII. and XIII., whose style is among the earlier. To these must also be added an inscription kept by M. Maspéro for Bulak, of which I have received a copy from Mr. Petrie. It is on early ware, but has a dot instead of a cross in its θ, a fact that takes much weight from its epigraphical authority.

What then must we say of these inscriptions, with their extremely rare combination of ω and three-stroke ς? I know no instance elsewhere in which both are found in one inscription; but at Erythræ (Roehl. 495), a (doubtful) three-stroke ς occurs, and the Erythræans probably then used the ω of M. Reinach's table, p. 186, (which must include in this line materials later than Roehl.). A three-stroke ς is also found on the Phanes coin of Halikarnassos. Perhaps then our classes XII. and XIII. are best taken apart from the series, as specimens of a local alphabet different at least from that of Miletos. This view is strengthened by the fact that the inscription left at Bulak records a dedication by Ἑρμαγόρης ὁ τ . . . (? Τήϊος). Unfortunately, the only Teian inscription found at Naukratis which is old enough to afford evidence on this point has its ς mutilated (700), and so it would be rash to venture on a definite attribution to that place; but we may at least keep XII. and XIII. separate from the classes that precede them on our table. Here then ends our list of the inscriptions that include the ω in their symbols, and which alone may be taken as characteristic specimens of the Ionic alphabet. Before the Naukratis series was discovered such a distinction would have been untenable, since Abu Simbel was regarded as the typical early specimen of that alphabet. But unless the evidence now before us has been wholly misinterpreted, that view must now be given up, for in the classes that follow next (XIV.—XVI.), Abu Simbel finds its closest parallels, and these are both distinct from and contemporary with many of the classes that are placed above them.

72. A revision of the results gained as to the history of the earliest period of the purely Ionic alphabet, finds therefore its fittest place at this stage of our discussion, and for the sake of clearness it will be best to take the letters in their usual order.

A; the cross stroke slopes in either direction, and starts from either the end or any other point in the side strokes.

B is absent merely from accident, but may be supplied from class XX.

Γ; the top bar either horizontal or sloping upwards; never downwards, as at Abu Simbel.

Δ; of usual form.

E; vertical stroke often prolonged, and side strokes sloped in either direction: turned on its front in earliest classes.

Ϝ; never found.

Z; like B, absent from mere accident.

H; only once in well-known early closed form, but it does not happen to occur in the four earliest classes.

Θ; always with cross, not dot, in centre (one exception).

I, K; usual forms.

Λ; with the two bars of equal length, or else the

second one shorter: no distinction can be drawn in usage.

M; in earliest times with three strokes only; later with fourth stroke sometimes as long as, sometimes shorter than, the rest.

N; in earliest times like Phœnician; afterwards in the usual form.

Ξ; usual early form.

O; usual form.

Π; almost always with second vertical stroke shorter, but with one or two exceptions.

Ϙ; used sometimes before *o*, till about 530.

P; the curved stroke generally comes to the foot of the straight one; but the more ordinary form also occurs.

Σ; in the earliest times rather erratic in form, but the four-stroke form is usual from the first, the three-stroke one only occurring later, and perhaps by confusion with other local alphabets.

T; usual form.

Υ; always in V form, two strokes joining at the bottom.

Φ; the vertical stroke is not prolonged outside the circle.

X; strokes slanting and uneven in earlier examples; later in form of cross with vertical and horizontal bars.

Ψ; does not occur, except in class XX., probably by mere accident.

Ω; found throughout in constant and regular use, from the very earliest examples, which are certainly earlier than the Abu Simbel inscriptions.

73. From class XIV. onwards, we can trace no connected series, but must take each by itself. Class XIV. has already been referred to as showing the closest affinity to the Abu Simbel inscriptions. Indeed, allowing for difference in the material and circumstances, the characteristic forms in the two are practically identical. But the inscription now before us (1*a*) is upon a pinax resembling those frequently found at Kameiros, and probably imported from that town. It was of course possible for one not a Rhodian to buy and dedicate Rhodian ware, as Polemarchos did (1), but it was also natural that a man should dedicate the product of his own country. The Abu Simbel inscriptions are generally regarded as of Rhodian origin (Kirchhoff, "Studien," p. 39), and so we may well look on this as another specimen of the Rhodian alphabet, and as not far removed from them in period. But in style and fabric of pottery, 1*a* can hardly be different from 1, nor can it be of different age. Now no less than five classes appear to precede 1, and some of them show forms so much less developed that a considerable interval must be left between them and the time of Polemarchos. Hence it follows that the Abu Simbel inscriptions are also much later than the earliest of the Naukratis classes. Since, however, we can hardly venture to ascribe any of the objects found to an earlier date than that of Psammetichos I., the great patron of foreign commerce and industry, it will be clear that the Psammetichos of the Abu Simbel inscriptions is the second king of that name, who reigned from 594 to 589 B.C. Thus the much-vexed question of the date of these inscriptions may at last be settled upon securer evidence; but it must be borne in mind that they are Rhodian, and not typical specimens of the Ionic alphabet at all, though doubtless allied to it.

74. Class XV. is remarkable for its forms of ε. It is worth noticing that the inscriptions contained in it were first selected for the absence of ω and the presence of the three-stroke ς, and it was only subsequently that this peculiarity of the ε became apparent. The evidence for it is stronger than appears at first sight; there is in the British Museum an uncopied inscription practically identical with 157, and at Bulak one identical with 132, but more complete. A form of ε, like that found in 132, occurs sometimes from mere inadvertence, but here seems intentional, there being no ϝ from which it must be kept distinct. If so, the other forms of ε in class XV. may be derived from this by a curve of the back stroke, a peculiarity not elsewhere noticeable.

Classes XVI. and XVII., which differ only by their forms of ς, do not call for much attention. They contain no characteristic letter such as might indicate their local origin; all that can be said is that they are distinctly non-Ionic, and probably from the mainland of Greece.

75. With class XVIII. the case is otherwise; it can at a glance be identified as belonging to the Melian group by its use of the complete circle for ω, of the semicircle for ο. None of the other forms are in themselves remarkable except the η, which is, I believe, quite new. It is obviously derived from the old closed form by the omission of the central bar instead of the two end ones; the nearest analogy to it is found in the two-bar form of the Rhegine inscription discovered at Olympia (Roehl, 532; it does not, of course, there represent η). This η could most easily be explained in very early inscriptions, but such these Melian ones cannot be, for their ς and μ at once assign them to Prof. Kirchhoff's third period. Since, however, a closed η is found even in his fourth period, this difficulty is not insuperable. The form of ρ is also new in Melian writing, and may be due to foreign influence. But though the relative ages of the Melian periods are fixed, their dates must now be reconsidered, as will be obvious to a reader of Prof. Kirchhoff's arguments (p. 61). If the third period belongs to the beginning of the fifth century, then these Melian inscriptions are later than almost all others found in the temenos of Apollo; while there is good reason for believing all to be earlier than the Persian invasion of Egypt. This difficulty may be got over, but perhaps there is no need to do so. It can hardly now be maintained that the Melians must have borrowed the symbols φ, χ, ξ, and ψ from the Ionians before the latter had invented the ω, for we have seen the ω in use from the very earliest times, and certainly before the Abu Simbel inscriptions. But since the Ionic alphabet is now seen to have been complete at a much earlier date than was hitherto supposed, the borrowing may have taken place at any time, and therefore the fluted column that bears the earliest Melian inscription may well be assigned to the end of the seventh century, and the other Melian periods thrown back in proportion. Nor do we thus approach too near to the Theræan inscriptions, which, if, as seems probable, earlier than the earliest found at Naukratis, must reach back to the first half of the seventh century. Unfortunately no evidence as to age can be gathered from the fabric or style of the pottery on which the Melian inscriptions are found; for, though peculiar to them, it does not seem to have any such characteristics as might indicate its date. Similar bowls must be assigned from their level to the earlier part of the sixth century; but it is hard to believe these inscriptions go back to such a date.

76. Class XIX. contains the ordinary forms of the Korinthian alphabet: it differs from all the other inscriptions here considered, as it merely consists of names applying to the figures painted on a vase. One of these names is painted before baking, the other subsequently scratched in, like most of the other Naukratis inscriptions.

The inscriptions found on pottery outside the temenos of Apollo do not require a separate discussion, as all fall easily enough into their places in the classes already distinguished. This sketch of what appear to be the most important epigraphical results of last year's discoveries must therefore be now ended. If any of the conclusions reached seem hasty or ill-founded, they must await their rejection or confirmation from next season's work.

77. A cursive transcription is here added of all the inscriptions represented in the plates, so far as they are intelligible.

Plate XXXII.

1. Πολέμαρχός [με ἀνέθηκε τ]ὠπόλωνι καὶ τὴν π[ρ]όχ-ουν καὶ τὸ ὑπο[κρητή]ριον.

   This dedication is very similar to that recorded in the well-known Sigeian inscription in the British Museum.

1*a*. Ἀπόλλωνός εἰμι.

1*b*. Ἀπ]όλλω σός εἰμι. Cf. 3, 4, &c.

2. Ὁ δεῖνα ἀνέ]θηκε τῷ Ἀπόλλωνι τῷ [Μ]ιλησί[ῳ.

   The ι of Ἀπόλλωνι is doubled by mistake. A good specimen of βουστροφηδόν.

3-4. Ὠπόλλω σοῦ εἰμι, or Ἀπόλλω σοῦ εἰμι.

   This form of dedication occurs also in 305.

Ἀπόλλω σόν εἰμι is found on 109, 126, 194, 291, 293, 297, 298, 302, and Ἀπόλλω σός εἰμι on 1*b*. Thus we have practically no less than twelve repetitions of this curious formula.

5. Παραμένων με ἀνέθηκε τὠππόλλωνι.
The μ of με is doubled, perhaps because of a defect in the rim.

6. Τὠπόλλωνος—τὠπόλλ[ων]ός εἰμ[ι.
7-9. Ἀπόλωνός εἰμι.
10-23. Ἀπόλλωνός εἰμι.
24. ——ς με ἀ[νέθηκε τὠπόλλωνι.
25. ——— ἀνέθη]κε ———.
33. Ἀ{ρ/π}τάλη (?) με ἀνέθηκε.
68-70. τὠπόλλωνός εἰμι.
72, 74, 76-79. τὠπόλλωνός εἰμι.
80. —ς μ' ἀνέθηκεν τὠπόλλων[ι.
81-83. Τὠπόλλωνός εἰμι.
83*a*.-86. Ἀπόλλωνος εἰμι.
87-98. Ἀπόλλωνος.
99. Ὁ δεῖνα ἀνέθηκε τὠπόλλωνι τῷ Μιλ]ησίῳ.
100. Αἴσχ[ιλος/ρίων? ἀνέθηκε τὠπόλλωνι.
101. —ωδιϛο— [ἀνέθηκε]ν τὠπώλλ[ωνι.
102. Ἥρα[ι ?
104. —ελπις Ἀπέ[λωνι.
105. Ἀπ]όλλων[ι.
106. Ὁ δεῖνα ὁ —]όλεω [Ἀπόλλωνι.
109. Ἀπόλ]λω σόν εἰμι.
110. Ἀπόλλωνός]εἰμι τοῦ Μι[λησίου.
112. Cf. 305 ?
114. —ων μ[ε ἀνέθηκε.
116. Ὁ δεῖνα] τῷ [Ἀπόλλωνι.
117. Λ]αμπυρὶς [ἀνέθηκε.
118. Ὁ δεῖνα ἀ]νέθηκε τὠ[πόλλωνι.
119-121. — τὠπόλλωνι.
122. Τῷ Ζηνὶ τῷ———
123. ἀνέ]θηκεν.
124. Τὠπ[όλλωνι.
125. Τ]ὠπόλλωνός [εἰμι ?
126. Ἀπόλλω σ]όν εἰμι.
129. Τὠπό[λλωνος.
130-131. Τὠπόλλωνός εἰμι.
132. Π]ύρος με ἀ]νέθηκε.
133. ἀ]νέθ[ηκε.
134-136. Τὠπολλωνός εἰμι.
137. —ς μ' ἀν[έθηκε.
138. ἀνέθη]κε.
139-141. Τὠπόλλωνός εἰμι.
143-145. Τὠπόλλωνός εἰμι.
146. Ἀπόλλω]νί με ἀνέ[θηκεν ὁ δεῖνα.
147-150. Τὠπόλλωνός εἰμι.
151-153. Ἀπόλλωνός εἰμι.
154. Τἀπ[όλλωνός εἰμι.
155. Τ]ῷ Ἀπόλωνι.
156-158. Τἀπόλλωνός εἰμι.
159-163. Τὠπόλλωνός εἰμι.
164. Ἀπόλλων]ι Διδυ[μεῖ.
It is curious that this title should occur once only in place of the common Μιλησίῳ.
177. Πρώταρχός με [ἀνέθηκε τ]ὠπόλλω[νι.
185. —αντίας κάθηκε τῷ [Ἀπόλλωνι ?
The use of κατέθηκε instead of ἀνέθηκε is curious. Is the meaning "deposited" possible ?
186. Πρώταρχός με ἀνέθηκε.
The forms of letters are so different from 177 that it seems probable that the dedicators of the two are not the same. Here is the only instance of θ with a dot, not a cross.
187, 188. Τὠπόλλωνος.
190. Τ]ὠπό[λλωνι π]ολυαρκίδης.
191. ἀνέ]θηκε.
192-193. Τὠπόλλωνός εἰμι.
194. Ἀπόλλω σὸ]ν εἰμι.
195. Πο]λυαρ[κίδης.
196-201. Ἀπόλλωνός εἰμι.
202. Ὁ δεῖνά] με ἀνέθη[κε.
203. Ἀπ]όλλωνι.
204. Ἀπόλλωνό]ς εἰμι.
The ει is here written by two symbols, not, as usual, by ε only. Cf. 305, 308, 312, 325, &c.
205. Ἀπό]λλωνος.
206. Ἀπό[λλωνος.
207. τῳ] Ἀπόλλωνι.
208. Ἀπό]λλωνος.
209. Ὁ δεῖνα ὁ] Τήϊος [Ἀπόλλωνι.
210-211. Ἀπόλλωνος.
212. Cf. 214. Ἀπόλλ]ωνι Ἄραυς ?
Apparently some "barbarian" name Hellenized.
213. Τὠπόλλω[νι.
215-216. Ἀπόλλωνος.

Plate XXXIII.

218. Φάνης με ἀνέθηκε τὠπόλλων[ι τῷ Μι]λησίῳ ὁ Γλαύϛου.
219. Ὁ δεῖνα ἀ]νέθηκε τὠπόλλωνι τῷ Μιλησίῳ.
220. Χαριδίων με ἀνέθ(ηκ)[ε.
[Χαριδίων με:] ἀ[ν]έθηκεν: τῷ Ἀπόλλω[νι.
221-222, 229. Ὁ δεῖνα ἀνέθ]ηκε τὠπόλλωνι.
223. Πολύ]κεστός μ' ἀνέθηκε τ[ὠπόλλωνι.
224-228, 230-232. Ἀπόλλωνός εἰμι.
233. Ἀπόλλωνός εἰμι τ]οῦ Μιλη[σίου.
234. Ἀπόλλωνός ε[ἰμ]ι Μιλησί[ου.
235. Σληύης μ' ἀνέθηκε τὠπόλλωνι.
It is not clear to what nationality the name Σληύης belongs.
236. Ἀνέθ]ηκαν Κλεψ[ίας καὶ ὁ δεῖνα.

237. Χαρόφνης: με ἀνέθηκε τἀπό[λλωνι τῷ Μ]ιλασίῳ.
239. Θεο]θέμιός ἠμι κ[αὶ τοῦ δεινός.
240. Ἀπό[λλωνος ?
245-247. Ἀπόλλωνός εἰμι.
249. Τὠπόλλω[νος.
250. Τἀπόλων[ος.
251. ?—— εἰμι
252-254. Τὠπόλλωνος.
255. —ης μ' ἀνέθηκε.
256. Τὠπόλ[λωνος.
257-258. Τἀπόλλωνος.
259. ——ς μ' ἀ[νέθηκε.
260-262. Τὠπόλλωνος.
263. Ἀπόλλω]νός εἰμι.
264. ἀνέ[θηκε.
265. Α]π[ό]λλω[νος.
The omission of the ο seems a mere slip.
266. Τὠπ]όλλωνος.
267-276, 278-284. Ἀπόλλωνός εἰμι. (Ἀππ—271.)
285-287. Τὠπόλλωνός εἰμι.
288. Ἀπόλ[λωνος.
289-290. Τὠπόλλωνός εἰμι.
291. Ὠπόλλω σόν [εἰμι.
292. Ἀπόλλωνος.
293. Ἀ]πόλλω σόν εἰμι.
294-295. Ἀπόλλωνος.
297-298. Ἀπόλλω σόν εἰμι.
299-300. Τὠπόλλωνος.
301. Γ]λαῦκ[ος ἀνέθηκε. Cf. 309.
302. Ἀπό]λλω σό[ν εἰμι
303. Ὁ δεῖνα ἀνέθηκέ] με.
304. Τὠπόλλωνος.
305. Ἀπόλλω] σοῦ εἰμι ?
307. Ὁ δεῖνα ἀνέθηκ]έ μ[ε.
308. Τὠπ[όλλω]νός εἰμ[ι. See 204.
309. Ἀνέθηκ]ε Γλαῦκ[ος.
311. Ἀπόλλ]ωνος.
312. Ἀπόλλωνός] εἰμι.
314-316. Ἀπόλλωνος.
319-320. Ἀπόλλωνός εἰμι.
321-323. Τὠπόλλωνος.
324. Ἀπόλλω[νος.
325. Ἀ]πόλλωνός εἰμει.
326. Να(ύπλι)ός με [ἀνέθηκε.
327. — δης μ' ἀνέθηκε τὠπόλλωνι.
328. —όρης.
329. Ἀ]πόλλ[ωνος.
330. ——— ατρυς, ———ελος.
331. Ἀ]πόλλωνός ε[ἰμι.
332. Ἀππό[λλωνος.
334. ——— ἀ]νέθηκε.
335. ἀν]έθη[κε.
336. Ἀπόλλωνό]ς εἰμ[ι
340. Ἑρμαγόρ[ης.
341. Τὠπόλλωνος τοῦ Μ]ιλη[σίου.
342. Ὁ δεῖνα ἐπ]οίει ?
345-346. Ὁ δεῖνα ἀνέθηκε τῷ Ἀπόλλωνι.
354. Δαμο. An abbreviation for the owner's name.

Plate XXXIV.

445. —ἀνέθηκε.
446. —ς με ἀνέ[θηκεν.
Ἥρη]ς ? A βουστροφηδὸν inscription, if so.
447. Ἥρη.
460. ἐ]πόησε δε Ἐγν—— ?
493. Θεοδώρου.
500. — Ἀπολλ[ωνίου ?
531. Ῥοδ—.
532. Σαφ— (altered from Σαπ—). The restoration Σάπφω is tempting.
594. Μύσου εἰμι.
636, 637. Δέκα. Clearly an indication of measure.

Plate XXXV.

665. Δ]ιοσκούροισι
ὁ δεῖνα ἀν]έθη[κεν.
666. —ένου Φωκαί[ευς ἀνέθηκεν.
667. Ἀλεξι]δήιος τοῖ[ς Διοσκούροις.
675-682. Διοσϙού[ροις.
688. Πολ]έμα[ρχος. Other names would, of course, fit the remains: but Polemarchos we know to have been a benefactor of the temple of Apollo, and his name may have been on this column, for such the curve shows it to be, in the temple of the Dioskouroi.
689. Ἥρης.
690. Τοῖς Θεοῖς, i.e. the Dioskouroi.
698. Ξενοφ[άνης.
700. Ὁ δεῖνα ἀνέθη]κεν: τἀφρο[δίτῃ.
ὁ——]ου ὁ Τήιιος.

78. Plate XXX.

1. Τεάω εἰμι
σῆμα.
The forms of the letters, especially the μ, with its short right-hand stroke, point to a fairly early date, say about 500 B.C. Σῆμα of course ought to mean tomb-stone, but if the stone was found *in situ* this is impossible, as it was discovered in the temenos of the Dioskouroi. But Mr. Griffith, who received it from the workmen, tells me it may either have been brought thither by them, or have been used again in ancient times for a new purpose, and therefore

the obvious explanation may well be the right one. It cannot, of course, refer to King Teos of the XXXth dynasty; but the name, which is clearly not Greek, may be the same.

2. Ἀμπελίων Σωσικράτους
Διὶ Θηβαίῳ.

3. Ἡ πόλις ἡ Ναυκρατιτ[ῶν.
Ἡλιόδωρον Δωρίωνος φιλο[πατρίδα,
τὸν ἱερέα τῆς Ἀθηνᾶς διὰ βίου [καὶ τὸν
συγγραφοφύλακα, ἀρετῆς και [εὐνοίας
ἕνεκα τῆς εἰς αὐτήν.

4. Κλεαίνετος Ἀριστοθέμιος
Μαιάνδριος Στρατωνίδεω
τὴμ πάλαιστραν ἀνέθηκαν
Ἀπόλλωνι.

A beautifully cut inscription, probably of the fourth century B.C. This dedication of a Palaistra or wrestling-place probably dates from the revival of the prosperity at Naukratis early in that century.

PLATE XXXI.

5. ———Φοῖβε πα———
———τ]ῆς ἰδίας ———
7. Ἡρακ[λεῖ
———ος Λακ[εδαιμόνιος
καὶ———δδωρος ———
8. ———τῷ Δ[ιί———?
9. ———Μ]ιλήτου———
ἱδρῦσ]αι τέμενος ———
———δάμου ———

10. The name of Ptolemy Philadelphos seems a probable restoration of l. 2.

11. This elegiac epitaph can hardly, from the forms of its letters and the badness of its execution, be earlier than the second century of our era. The following is in some places no more than a conjectural attempt at its restoration:—

Οὐχὶ κρόκῳ παστός σε διάβροχος οὐδὲν ὑπ' εὔνα[ς
ἄγαγον ἐς νύμφας ἱμεροπνοῦν θάλαμον,
κοῦρε μεγ' αἰνητοῦ Χαιρήμονος Ἡρακλῆδα,
ἀλλά σε πρὸς Λάθας ἀνιόχηον ἕδος.
5. στέρνα μετ' οἰμώγας δὲ τάφου πέλας———
ἐπλατάγησέ τ', ἔα, γηρόκομος γενέτας,
π[ᾶ]σά τε σὸν στενάχησε πόλις βαρυκάδεα πότμον
———Ἑρμείας μύρατ' ἀνάξι' ἄ[γων
———δ' οὐκ ἔσθενεν, ἥδε———
10. νερτέρι' οὐ Μοιρῶν νοσφὶ λέλογχε θανών.

A translation is added to show the probable drift of the whole.

"I was no chamber sprinkled with saffron, to lead thee in wedlock to the love-breathing bower of thy bride, Herakleides, son of the much honoured Chairemon; but I charioteered thee to the abode of Lethe. And thy white-haired father, alas! mourned and beat his breast, near the tomb, and all the city bemoaned thy fate of heavy woe; even Hermes grieved to lead thee away, all undeserving. Yet the youth had no power to escape, but hath, not without the Fates' decree, his allotted place in the realms below."

It will be observed that there is considerable confusion in the use of the persons in successive lines, but not more than might be expected in such an epitaph.

PLATE XX.

Nos. 28, 32, and 35 seem to be tablets of dedication to be attached to larger objects on which it was inconvenient to engrave an inscription. They may be thus read:—

28. Παρμέ-
νισκος
θεόφι.

θεόφι, which is quite clear, must be an affected archaism, imitated from the Homeric form.

32. Ἡρακλε[ῖ.
Καλλίτω ⊢N, i. e. δραχμὰς πεντήκοντα.

This will not quite explain all the scratches, but a few of them may be accidental; all required for the above reading are clear.

35. Ἥλισ-
κος Ἑρ-
μι.

Copies of certain other inscriptions still in Egypt have been supplied to me by Mr. Petrie and Mr. Griffith. As, however, no facsimiles have been prepared for publication, and the reading is in some cases doubtful, it seems better to reserve them for next year, when they can be more adequately edited.

CHAPTER VIII.

THE COINS.

BY BARCLAY V. HEAD.

79. Among the many objects of interest which have been discovered on the site of Naukratis, the coins must not be overlooked, for they contribute their full share of light upon the obscure history of the town, not so much by reason of their absolute novelty (although there are among

them at least two unpublished coins), as because they reflect to some extent the material prosperity of the place, indicating with what regions the merchants of Naukratis carried on their business transactions, and, by the comparative frequency of their occurrence in successive centuries, the space of time over which the commercial activity of the city extended.

Roughly speaking, the series of coins which have been found at Naukratis fall into seven chronological periods somewhat as follows:—

B.C. 520—350.	Greek Autonomous silver,	about 97	coins.
B.C. 350—300.	Greek Autonomous bronze,	„ 90	„
B.C. 300—30.	Ptolemaic bronze,	„ 150	„
B.C. 30—A.D. 190.	Imperial bronze of Alexandria,	„ 530	„
A.D. 190—300.	Imperial potin of Alexandria,	„ 12	„
A.D. 300—340.	Constantine family small bronze	„ 12	„
After A.D. 340.	Byzantine, Arabic, and Turkish bronze,	„ 18	„

These numbers are not in all cases exact, as the condition of many of the bronze coins does not admit of a precise classification. In fact, until they had been soaked for some days in a solution of hydrochloric acid and water, and then carefully washed and brushed coin by coin, it was impossible to classify them at all, however roughly.

The process of cleaning to which they have been subjected is, however, quite sufficient to show that Naukratis ceased to exist as a centre of commercial life about A.D. 190; the few coins which are subsequent to that date serve only to prove the poverty and insignificance of the village, which continued, perhaps, for some time longer to bear the ancient and illustrious name of Naukratis.

I will now proceed to describe in greater detail all such coins of the above classes as I have been able to identify.

I. THE SILVERSMITH'S HOARD.

80. On the east side of the town, Mr. Petrie discovered a hoard of fifteen archaic Greek silver coins, together with 42 oz. of roughly cast and cut up lumps of silver. This he supposes to have been a portion of a silversmith's stock-in-trade. The coins are from various parts of the Greek world, ranging from Cilicia in the east to Sicily in the west, but in point of time they belong almost wholly to the first half of the fifth century B.C. They are as follows:—

Mallus Ciliciae.

Circ. B.C. 520—485.

Four-winged female figure clad in chiton, in running or kneeling attitude, l., with arms extended, and with an object (stone or fish) in her left hand.	Incuse square, within which is a conical stone. Æ Stater, 185·7 grs.

This coin differs from the specimens hitherto published by Dr. Imhoof-Blumer (*Annuaire de Numismatique*, 1883, Pl. v. 1—4), in that the figure seems to have had four wings, of which three are visible, and that she holds something in her hand resembling a fish. The date assigned by Dr. Imhoof to the earliest coins of Mallus, of the class to which this specimen belongs, is B.C. 520—485.

Lycia.

Circ. B.C. 450.

Foreparts of two bulls, back to back, and joined by their necks; in field above them a triskelis?	ΓΟΚ between the three limbs of a triskelis, the whole in circle of dots enclosed in an incuse circle. Æ Stater, 131·8 grs.

(Fellows' *Lycian Coins*, Pl. ix. 9.)

Whether the legend on this coin, which often occurs at full length as ΚΟΓΡΛΛΕ, is the name of a town or of a dynast is still a matter of dispute. It is remarkable that all the coins reading ΚΟΓΡΛΛΕ are of about the same date, none being much later than the middle of the fifth century.

Chios.

Circ. B.C. 500.

Sphinx seated l., with amphora before her.	Quadripartite incuse square, the four quarters roughly and deeply indented. Æ 119 grs.

This coin was in all probability struck before the Persian conquest of Chios in B.C. 490, for

some time after which it is hardly conceivable that Chios would have been in a position to issue money.

SAMOS.

Circ. B.C. 494—439.

Lion's scalp facing.	ΣΑ Head and neck of bull, r. Æ Staters, 198·2 grs. 183·5 grs.

(Gardner, *Samos*, Pl. i. 14.)

Of this type there are two specimens; the date above given is that which Prof. Gardner (*Samos and Samian Coins*, p. 42) assigns to this class of Samian money.

Circ. B.C. 439—430.

Lion's scalp, of later style than the preceding.	ΣΑ Fore-part of bull, r., with ornament round neck; behind, olive spray; the whole in incuse square. Æ Stater, 198·7 grs.

(Gardner, *op. cit.*, Pl. ii. 3.)

This is the latest coin in the silversmith's hoard. It belongs, according to Mr. P. Gardner, to the period when Samos was in close relations with Athens, as is indicated by the presence of the olive-branch, the badge of Athenian rule in the island.

AEGINA.

Circ. B.C. 480—456.

Tortoise, the structure of the shell indicated as in nature.	Incuse square, divided by bands into five parts. Æ Stater, 173·5 grs.

There can be no doubt as to the period to which this coin belongs, as all the archaic staters of Aegina, viz. those struck before B.C. 480, bear a tortoise with a plain shell, and as Aegina was made tributary to Athens in B.C. 456, and ceased at that time to strike silver staters.

ATHENS.

Circ. B.C. 500—430.

Of this period the silversmith's hoard contained six tetradrachms of the best archaic style, similar to those described below (p. 66).

CYRENE.

Circ. B.C. 500—450.

Of this city the hoard contained a broken portion (consisting of about one half) of an archaic tetradrachm of the same type as a more perfect specimen described below (p. 66), the portions visible being on the *obverse* the silphium and the knees of the nymph, and on the *reverse* the fore-legs and lower part of the winged horse.

SYRACUSE.

Circ. B.C. 500—480.

ΣΥΡΑΚΟΣΙΟΝ (retrograde). Head of goddess of archaic style surrounded by dolphins. (Cf. B. V. Head, *Coinage of Syracuse*, Pl. i. 6.)	Quadriga, horses walking, driven by charioteer holding goad and reins: above, Nike flying, crowning the horses. Æ Tetradr., 266·8 grs.

My reasons for assigning this coin to the period before B.C. 480, are stated in the work above referred to.

It is evident that these fifteen coins are a portion of a very much larger number which the silversmith (a part of whose stock-in-trade they represent) was actually in process of melting down when the event occurred which occasioned the burial of the treasure. Of course, we have no means of deciding the exact date when this happened, but judging from the date of the latest specimen in the hoard, it cannot have been earlier than B.C. 439.

II. ATHENIAN TETRADRACHMS.

81. In addition to the silversmith's treasure, but not forming part of it, Mr. Petrie acquired on the site of Naukratis the following varieties of Athenian tetradrachms.

Class I. Before B.C. 500.

Head of Athena, of very archaic style, in close-fitting helmet with plain crest and simple volute ornament behind; the goddess wears a circular earring, and her hair is arranged in a fringe over the forehead.	Well-defined incuse square, within which ΑΘΕ and owl r., head facing, and wings closed. In the left upper corner of the incuse square a spray of olive. Æ *Tetradrachm.*

(Cf. B. M. *Guide*, Pl. vi. 27, 28.)

Class II. Circ. B.C. 500—430.

Head of Athena, of refined archaic style, her helmet with feathered crest, adorned in front with three olive-leaves erect, and at the back with a floral scroll. She wears a circular earring, and her hair is arranged in wavy bands across her temples.	Incuse square, within which ΑΘΕ and owl r., head facing, and wings closed; behind, crescent and olive-spray.

Æ *Tetradrachm.*

(B. M. *Guide*, Pl. xiii. 20.)

Class III. Circ. B.C. 430—350.

Similar type, but without any traces of archaism. The eye of the goddess is seen in profile. The helmet is decorated as on the coins of Class II. The execution of the coins of this class is generally rougher and more careless than that of the more archaic coins.	Incuse square, within which ΑΘΕ Owl, &c., as on the coins of the previous class, but of rougher work.

Æ *Tetradrachm*

(Beulé, *Mon. d'Athènes*, p. 41.)

Of the above described three classes of Athenian tetradrachms, there have been found altogether 80 specimens on the site of Naukratis.

Of Class I. a single specimen found separately, of Class II. 67, and of Class III. 12.

The coins of the last two classes were discovered in two separate hoards, of which the first consisted mainly of coins ranging in date from B.C. 500—430, and the second and smaller hoard chiefly of coins of the later and rougher class, ranging in date from B.C. 430—350.

III. VARIOUS GREEK COINS.

82. The following coins were not found together, but were brought to Mr. Petrie separately, or a few at a time, by the people of the neighbourhood.

Cyrene.

Circ. B.C. 500—450.

Nymph Cyrene seated l., clad in close-fitting chiton and wearing stephanos. She extends her r. hand towards a silphium which stands before her. In field behind her a large silphium seed.	Forepart of Pegasos l. in dotted square.

Æ Attic tetradr., 238 grs.

As this coin is much injured on the reverse, and has lost considerably in weight, it is quite certain that it must belong to the Attic standard. No other specimen of this type has hitherto come to light, except the fragment in the silversmith's hoard; but it may be compared with a somewhat similar coin also showing a seated nymph, but with a head of Ammon on the reverse, lately published by M. Babelon in the *Revue numismatique*, 1885, pl. xv. 5.

Side in Pamphylia.

Circ. B.C. 400—*time of Alexander.*

Pallas, clad in long chiton with diploïs, standing l., extending her r. hand towards a flying Nike, who is about to crown her; beside her is her spear and shield, upon which her left hand rests. In front, pomegranate, the badge of the town.	Apollo naked but for chlamys over his shoulders, standing l., resting on long branch of laurel and sacrificing at a flaming altar; at his feet a raven? Behind, an uncertain inscription, apparently in characters resembling the Aramaic.

Æ Stater (plated) broken.

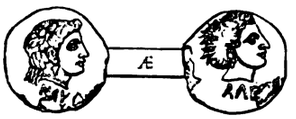
This coin belongs to the class attributed by De Luynes (*Num. des Satrapies*, p. 22) to the Persian Satraps, Dernes and Syennesis.

Naukratis.

Circ. B.C. 323—305.

Head of Aphrodite? r., wearing earring, necklace, and wreath, hair rolled, and with four loose locks escaping down back of neck; beneath, ΝΑΥ.	Female head r., perhaps the city of Naukratis: beneath ΑΛΕ.

Æ Size ·65.



Of this interesting and hitherto unknown little coin, two specimens have been brought home by Mr. Petrie. The inscription ΝΑΥ leaves no reasonable doubt that their place of mintage was Naukratis; neither are they difficult to date, for both style and fabric point clearly to the closing years of the fourth century B.C. The presence of

the legend ΑΛΕ shows also that they were struck in the name of Alexander. The same three letters occur on certain other small bronze coins struck by Ptolemy before he assumed the title *Βασιλεύς*. Of these, some are attributed conjecturally by Mr. Poole (B. M. *Cat. Ptol.*, pp. 3 and 5) to Paphos and Citium in Cyprus; others cannot be assigned to a particular mint with any approach to certainty. The discovery of the coins reading ΝΑΥ and ΑΛΕ on the site of Naukratis will, however, lead to the inference that other varieties reading ΑΛΕ, such as those described in the B.M. *Cat. Ptol.*, p. 6, were also struck at Egyptian mints.

CNIDUS IN CARIA.

Circ. B.C. 330—300.

Head of Apollo laur. r.	ΚΝΙ Prow of galley. Æ ·45. 3 specimens.

RHODES.

Circ. B.C. 330—300.

Head of nymph Rhodos wearing stephane.	Ρ—Ο Rose. Æ ·45. 2 specimens.

PHASELIS IN LYCIA.

Circ. B.C. 330—300.

Prow of galley.	[ΦΑΣ] Stern of galley. Æ ·45. 1 specimen.

ERYTHRAE IN IONIA.

Circ. B.C. 330—300.

Head of bearded Herakles in lion's skin.	ΕΡΥ Club and Bow in case; between them a magistrate's name, ΑΣΚΛΗΓΙΑΔΑΣ? Æ ·5. 1 specimen.

CYPRUS.

Evagoras II., King of Salamis, B.C. 368—351.

Head of Pallas.	ΕΥΑ Lion walking r., above, star. Æ ·55. 1 specimen.

(*Rev. num.*, 1883, Pl. vii. 5.)

CYPRUS UNCERTAIN.

Circ. B.C. 350—312.

Lion walking l.; above, a Ram's head.	Horse walking l.; above, star, in front, crux ansata. Æ ·55. 4 specimens.

(*Rev. num.*, 1883, p. 311.)

ALEXANDER THE GREAT.

B.C. 336—323.

Head of young Herakles in lion's skin.	ΑΛΕΞΑΝΔΡΟΥ Club and bow in case. Æ ·65. 6 specimens.
Id.	,, Id. Æ ·45. 3 specimens.

Out of about 90 small bronze coins, all in very poor condition, the above described 21 pieces are all that I have succeeded in identifying. Among those which remain, there are probably many which belong to the same classes as those which I have been able to decipher. The only interest of these little coins is that they give us some idea of the regions with which Naukratis chiefly traded before the foundation of Alexandria.

IV. COINS OF THE PTOLEMIES.

83. Next in order of time follows a large number of bronze coins of the Ptolemies, ranging in date from about B.C. 315—B.C. 30.

These were not found together, but were brought in to Mr. Petrie for the most part separately, or in batches of a few at a time.

It is obviously unnecessary to describe these coins in detail, nor indeed would it be possible in most cases to do so, as there are very few among them sufficiently well preserved. It may, however, be useful to note the numbers which I have identified in each reign.

	No. of Specimens.
Ptolemy I., Soter. B.C. 323—284.	
A tetradrachm (once plated) of the so-called Alexander "Aegus" class. B. M. *Cat. Ptol.*, p. 4, 35	1
Æ ·75. *Ibid.*, Pl. ii. 1.	5
Æ 1·15—·95. *Ibid.*, Pl. iii. 3, 4	10
Ptolemy II., Philadelphos. B.C. 284—247.	
Æ 1·1. B. M. *Cat. Ptol.*, Pl. iv. 3	4
Æ 1·65. *Ibid.*, Pl. v. 7	2

	No. of Specimens.
Ptolemy III., Euergetes. B.C. 247—222.	
Æ Tetrad. 2nd Coinage struck at Ptolemaïs.	
B. M. *Cat. Ptol.*, p. 50, No. 37	1
Æ ·75. *Ibid.*, p. 47, No. 11	1
Æ ·75. *Ibid.*, Pl. x. 8	1
Æ ·65. *Ibid.*, p. 56, No. 96	1
Æ 1·3—1·2. *Ibid.*, Pl. xii. 1	7
Æ 1·6. *Ibid.*, Pl. xii. 6	1
Ptolemy IV., Philopator. B.C. 222—204.	
Æ 1·5. B. M. *Cat. Ptol.*, Pl. xv. 3	4
Æ 1·. *Ibid.*, Pl. xv. 4	2
Æ 1·45. *Ibid.*, Pl. xv. 5	1
Ptolemy V., Epiphanes. B.C. 204—181.	
Æ 1·2. B. M. *Cat. Ptol.*, p. 69, No. 8	1
Æ ·95. *Ibid.*, p. 69, No. 9. (Cf. Pl. xvi. 3)	3
Æ ·6. *Ibid.*, p. 69, No. 12	1
Æ ·9. *Ibid.*, Pl. xvi. 10	3
Æ 1·45. *Ibid.*, Pl. xviii. 1	5
Ptolemy VI., Philometor. B.C. 181—146.	
Æ ·7. B. M. *Cat. Ptol.*, p. 78, No. 2	2
Æ ·9. *Ibid.*, Pl. xviii. 9	1
Ptolemy VIII., Euergetes II., Physcon. B.C. 170—117.	
Æ 1·05. B. M. *Cat. Ptol.*, Pl. xxi. 3	2
Æ ·8. *Ibid.*, p. 89, No. 12	1
Æ 1·3—1·2. *Ibid.*, Pl. xxii. 5	4
Æ 1·15. *Ibid.*, Pl. xxiii. 8	5
Æ ·85. *Ibid.*, Pl. xxiii. 10	3
Æ ·95. *Ibid.*, p. 98, No. 130	2
Ptolemy VIII. and Cleopatra II. and III. B.C. 127—117.	
Æ ·85. B. M. *Cat. Ptol.*, Pl. xxiii. 3	1
Ptolemy X., Soter II., Lathyrus. B.C. 117—81.	
Æ Tetradr. Struck at Alexandria in B.C. 108.	
B. M. *Cat. Ptol.*, cf. Pl. xxvii. 2	1
Æ 1·2—1·15. *Ibid.*, Pl. xxvi. 7, 8	6
Æ ·8. *Ibid.*, p. 106, No. 32	16
Cleopatra VII., Philopator. B.C. 52—30.	
Æ 1·05. B. M. *Cat. Ptol.*, Pl. xxx. 7	11
Æ ·8. *Ibid.*, Pl. xxx. 8	1
Uncertain Ptolemies, Æ	about 39

The total number of the Ptolemaic coins brought from Naukratis is, therefore, about 150, but hundreds were rejected. The exact number cannot be ascertained, as many specimens are in such bad condition that it is impossible to distinguish whether they belong to the Ptolemaic or to the Alexandrian class.

V. IMPERIAL OF ALEXANDRIA.

84. I now pass to the Imperial series of the city of Alexandria, of which there are about 450 specimens more or less legible, and apparently about 80 illegible, though some of these may be coins of the later Ptolemies.

It will be seen from the following list, that as many as 85 coins belong to the reign of Claudius, and 304 to that of Vespasian. The latter, Mr. Petrie informs me, came from a single find, but all the rest were brought to him separately.

		No. of Specimens.
Augustus, B.C. 30—A.D. 14.		
Reverse. 'Canopic' vase	Æ 1·0	1
Nike standing, L M[A]	Æ ·9	1
Shrine containing thymiaterion	Æ ·9	2
Oak-wreath	Æ ·95	1
Double cornucopiae	Æ 1·0	1
Altar of Augustus	Æ ·65	1
Crescent and star	Æ ·55	1
Livia? Oak-wreath, L M	Æ ·75	1
Tiberius, A.D. 14—37.		
Hippopotamus, L E	Æ ·75	3
Claudius, A.D. 41—54.		
Eagle on fulmen, L IΓ	Æ 1·0	3
Id., with head turned back, L IΓ	Æ 1·0	46
Caduceus between four ears of corn, L I	Æ 1·0	15
Sheaf of six ears of corn, L B	Æ ·9	3
Bust of Nilus	Æ ·95	4
Bust of Isis, L A	Æ 1·0	1
Nike, L B	Æ 1·0	3
Bull butting, L B and L Γ	Æ ·95—·8.	7
Hippopotamus, L B	Æ ·95	3
Agrippina, wife of Claudius.		
Bust of Euthenia, ΕΥΘΗ—ΝΙΑ, L IB and IΓ	Æ ·95	8
Nero. A.D. 54—68.		
One-handled vase, L IΔ	Æ 1·0	1
Roma standing, L H	Æ ·8	5
Galba. A.D. 68—69.		
Bust of Nilus, L B	Æ 1·15	2
Bust of Nike, L B	Æ 1·5	1
Bust of Serapis, L B	Æ 1·0	7
Bust of Isis, L B	Æ ·95	4
Otho. A.D. 69.		
'Canopus,' L A	Æ ·8	6
Vespasian. A.D. 69—79.		
Bust of Nike, L A, B, Γ	Æ 1·4	59
Bust of Serapis, L A, Γ, Δ, E, ϛ, Z	Æ 1·0	49
Zeus Serapis seated, ΖΕΥΣ ΣΑΡΑΠΙΣ, L.H, L.ENAT	Æ 1·1	5
Id., standing, ΖΕΥΣ ΣΑΡΑΠΙΣ, L.H, L.ENAT	Æ 1·1	4
Bust of Nilus, L B, Γ	Æ 1·15	7
Bust of Isis, L Γ, Δ, E, ϛ, Z	Æ 1·0	73
Bust of Alexandria, L.ENAT	Æ ·9	35

		No. of Specimens.
Hawk of Horus, L Δ, E, ϛ	Æ ·75	41
'Canopus,' L.Δ	Æ ·8	8
Dikaiosune, L.H, L.ENAT	Æ ·8	23
Vespasian or Titus.		
Bust of Nilus	Æ 1·2	1
Bust of Isis	Æ 1·2	1
Vespasian and Titus Caesar.		
Busts of Vespasian and Titus, L.ENAT	Æ 1·35	2
Domitian. A.D. 81—96.		
Griffin with wheel	Æ ·75	1
Sphinx, L ΙΔ	Æ ·8	1
Uraeus, L ΙΑ	Æ ·7	1
Hadrian. A.D. 117—138.		
'Canopus'	Æ 1·35	1
Two 'canopi'	Æ 1·3	1
Eusebeia sacrificing, L ΙΕ	Æ 1·15	1
Emperor in temple of Sarapis, L ΙΖ	Æ 1·35	1
Demeter standing, L ΚΑ	Æ 1·1	1
Antoninus Pius. A.D. 138—161.		
Emperor in quadriga	Æ 1·25	1
Dikaiosune seated	Æ 1·35	1
Commodus. A.D. 180—192.		
Roma seated	Æ 1·0	1
Uncertain. Chiefly of the early empire, all in very poor condition	Æ about	80
Gallienus. A.D. 253—268.		
Eagle holding wreath, L ΙΔ, L ΙΕ	Pot. ·9	3
Aurelian. A.D. 270—275.		
Eagle between military standards ?	Pot. ·8	1
Carinus. A.D. 283—285.		
Elpis standing, L Β	Pot. ·7	1
Diocletian. A.D. 284—305.		
Dikaiosune, L Β	Pot. ·8	1
Eagle between standards, L Δ	Pot. ·8	1
Uncertain late Alexandrian	Pot. ·8	5

VI. NON-ALEXANDRIAN (IMPERIAL TIMES).

The coins of Imperial times, other than Alexandrian, are very few indeed. The only specimens which I have been able to identify are the following:—

JUDAEA. First Revolt of the Jews, A.D. 67—70.

Vessel with two handles.	Vine-leaf.	Æ ·65	4

From the few letters still legible on these little coins it would seem that they belong to the 2nd or 3rd year of the Revolt (cf. Madden, *Coins of the Jews*, p. 206).

LAODICEIA IN SYRIA.

M. Aurelius. A.D. 161—180.

Bust of M. Aurelius.	ΙΟΥΛΙΕΩΝ //////////////// Dionysos standing facing, holding grapes and thyrsos, at his feet panther; in field, ΠΟ—ΜΑΡ.	Æ ·95.

The condition of this coin does not warrant us in assuming that the full legend was ΙΟΥΛΙΕΩΝ ΤΩΝ ΚΑΙ ΛΑΟΔΙΚΕΩΝ. The letters ΠΟ—ΜΑΡ belong to the class of abbreviated words, frequent on coins of Laodiceia, which still await their explanation.

VII. CONSTANTINE FAMILY, BYZANTINE, AND MODERN.

		No. of Specimens.
Constantine I. A.D. 306—337	Æ ·6	5
Constantine II. A.D. 337—340	Æ ·8	1
Constantine family, uncertain	Æ ·65	6
Byzantine, various, in poor condition	Æ	7
Arab, Turkish, &c., various	Æ	11

CHAPTER IX.

THE WEIGHTS OF NAUKRATIS.

85. The city which served for many generations as the principal centre of trade between the East and the West, the only link between the rising commerce of the Ionians and the riches of Egypt and the Red Sea trade, was naturally more abounding in weights than were the partly military, partly religious Egyptian cities, whose business solely related to the produce of their own neighbourhoods. It is to Naukratis that we should look for the greatest harvest of ancient weights, and our expectations are more than fulfilled. A single month's collecting will provide a finer collection of the Egyptian *kat* weights than any museum yet possesses, and the season's work has quadrupled all the published Egyptian weights hitherto known, and provided us with over five hundred in all.

The whole of the results are here worked out and tabulated; and though no finality can be

expected in treating the produce of only the first season in such a site, yet I have endeavoured to treat the subject in a manner more complete and intelligible than the publication of other collections, as a sample of the method by which such materials should be studied. We should treat ancient weights as we should a set of astronomical observations,—with the same care in the elimination of errors in our material,—with the same consideration of the proper methods for educing various results from them of different kinds,—with the same unbiassed search for facts which they may show us,—and, above all, with the same regard for the extent of their errors and the amount of uncertainty or certainty in our results. It would be as reasonable to refuse to apply modern powers of calculation to ancient observations of an eclipse, because the observer would not have had an idea of our process, as it would be to reject exact and scientific methods of treating our materials in ancient metrology because the people who made the weights had no idea of scientific accuracy. We apply our exactitude in order to find out their errors.

Further, we are here debarred from a final treatment of the whole subject not only by our expectations, but also by what we at present possess not yet worked out. Besides all the Egyptian weights hitherto published (of which but twenty-three are rightly attributed) there are over twenty more in Bulak, four in the British Museum, eighteen in my collection, and a few more also in private hands. Of Assyrian shekel weights I have twenty-six, and there are six or eight others unpublished. Of various Greek standards and the Roman there are a large quantity unpublished in the British Museum, several in Turin, over forty Greek and thirty Roman in my collection, and several in other hands. Hence it is useless to attempt a complete statement until all this material shall have been thoroughly treated; but as the weights from Naukratis have a special value in themselves, as a class entirely belonging to one place and covered by a small range of Egyptian history, their details are of value for study, apart from the weights found in other places.

86. The first stage in examining weights is to ascertain accurately their present weight. For this purpose I weighed all those weights below 10,000 grains in a chemical balance, which shows $\frac{1}{10}$ grain with this load. All fractions of a grain were read by a rider weight of 2 grains on the beam-arm. The equality of the arms was always read by double weighing two or more of the heaviest weights of each batch of weighings, and applying the correction thus found to all the other weighings of that batch. The modern weights used had all been carefully compared together, and the heaviest of the series was kindly verified for me at the Standards Office, and by Messrs. Oertling; small corrections to reduce to the true standard were always applied. I have not thought it needful to state any weight in less terms than $\frac{1}{10}$th of a grain, nor in those over 5000 grains to less than single grains. The heavier weights were weighed in scales which would show a difference of 1 in 5000, which is doubtless a far less amount than the errors of their formation.

87. On looking at a collection of ancient weights or coins, it is at once manifest that they have undergone changes of various extent since their original formation and adjustment. These changes cannot be avoided by ignoring them, as has been done by all writers on metrology, and in all published lists of weights. If we are to draw any precise conclusion as to the relationships, exact or approximate, of various ancient standards of weight, it can only be done after taking account of the changes that our remaining examples have undergone. To estimate these changes we must observe their nature and extent: the first by reference to the chemical composition of the compound before us, if the mass be of metal; the second by measurement and calculation. The compounds most usually met with, and their weights in British grains, are as follow:—

Name.	Formula.	Weight of cubic inch.	Percentage non-metallic.
Silver, chloride . . .	$AgCl$	1400	24·7
Silver, sulphide . .	AgS	1820	12·9
Copper, oxide (black) .	CuO	1640	20·1
Copper, sub-oxide (red) .	Cu_2O	1450	11·2
Copper, sulphide (black soft)	Cu_2S	1460	20·1
Copper, green carbonate .	$CuO, H_2O, CuCO_2$	960	42·5
Copper, blue carbonate .	$CuO, H_2O, 2CuCO_2$	960	44·5
Tin, binoxide . . .	SnO_2	1760	21·3
Lead, carbonate . . .	$PbCO_3$	1630	22·6
Lead, sulphate . . .	$PbSO_4$	1590	26·4
Zinc, carbonate . . .	$ZnCO_3$	1110	48·0

The extent of the change is to be estimated by measuring the thickness of the scale of compound and its area, thus ascertaining its cubic volume; and hence, by the weight of a cubic inch given above, its weight.

To find the thickness of a scale or crust of compound, a hole should be cut through it with a hard-steel point in two or more places; then examining it with a magnifier, and by a scale of $\frac{1}{100}$ths of an inch, the thickness may be estimated. The general surface of a weight must also be taken into account, and the crust examined at a point which is likely to yield a fair average, and not close to an edge, which is always more deeply corroded. For leaden weights some estimate must be made of the loss of carbonate of lead by solution or wear; and the same is sometimes requisite for copper weights: any fragments of an original outer surface must be observed, and the proportion of loss judged by examination with a magnifier. If the weight be of stone, the loss must be compared with a set of samples of stone of different textures and surface, ground or reduced to different amounts, which are duly recorded as a scale of comparison. The loss is of three classes: (1) wear of surface by rubbing, generally not over five grains per square inch; (2) wear of edges by bruising, generally not over three grains per inch length; and (3) chips, which may be of any extent up to the loss of the greater part of the weight. Five or six examples of each of these sorts of loss were prepared and used as standards of comparison for all the stone weights here treated.

In some cases of metal weights it is desirable, if they are deeply encrusted, to clean them. It need hardly be said that to clean a weight without using the balance is a vandalism worthy of Mummius. The first step is to examine the surface closely, and settle what fraction of the whole crust has been already lost by rough usage; this may be scarcely any, or may be the greater part. Then weigh the weight; then remove the crust (generally by cracking it off by light blows), weigh the weight again, and take the difference as the amount of scale removed. Note what the composition of the scale is, and also what nature and amount of compound may remain on the weight. Sometimes copper weights may be found with only a small core of metal, the greater part of the bulk below the green carbonate when that is removed proving to be red oxide, or in other cases the whole of the inner mass is black oxide. A small drill is required to test the thickness of the compound when it is so considerable. Of course the gain of weight in the crust is ascertained by the percentage of non-metallic matter given in the above table.

88. To take now some actual examples of the methods followed in the present work. After weighing a stone weight, and applying the corrections for inequality of balance-arms and error of weights used, we have 1259·2 grains for its present weight; the bruising of the edges is estimated by comparison at ·3 grain per inch run, their length is 7 inches, loss therefrom 2·1 grains; there is a chip of ·3 grains, and so the total loss is 2·4 grains, and the original weight therefore 1261·6. Again, another is now 960·2; it has lost 2 grains per square inch of surface, and is $6\frac{1}{2}$ square inches in area; adding therefore 13 grains, we have 973[1] grains for the original weight. A copper weight is now 268·5 grains; the thickness

[1] It is a needless and misleading statement to enter tenths of a grain when the uncertainties of estimating the loss amount to many grains. In cases of allowances of 40 or 50 grains, it is best to state only the nearest 10 grains; the character of a statement should always correspond to its real accuracy.

of the scale is estimated at 6M[2], the area is 1·3 square inches, the volume therefore 8M; it will then weigh about 10 grains (being half red oxide and half green carbonate), and of this 3 grains will be gain by oxygen and carbonic acid; the original weight therefore was 265·5 of metal. A copper weight is now 139·9 grains; it has $\frac{3}{5}$ of its crust of green carbonate remaining, and $\frac{2}{5}$ is lost, and after cracking the remaining scale off, the loss is 63·2 grains: therefore 42 grains have been lost. Thus the gain is 28 grains of oxygen and carbonic acid, and the loss 23 grains of copper. But it also consists of red oxide to a depth of 85M on an area of ·45 square inch, or 35M volume = 50 grains, and showing a gain, therefore, of about 6 grains of oxygen. The whole gain then is 34 grains, and loss 23, showing the original weight was 129 grains. The allowance for crust that has been lost requires particular care; in many cases a thick coating may have been knocked off (containing perhaps 10 grains of metal on a weight of 130) without the appearance calling attention to it; a careful scrutiny with a magnifier is indispensable, and some familiarity with the appearances of partly-cleaned weights, whose loss may be still measured.

89. In the case of silver coins it is very desirable, for all examples that are not worn, to ascertain the original weight when buried. For this purpose we need to free them from all matter which they have accumulated, both in chemical combination and in mechanical addition. The necessity of this was strongly brought before me by the finds of tetradrachms in good condition at Naukratis; and the method devised for them was found to answer admirably as a means of cleaning silver coins. First, they are placed each in a separate cup of weak hydrochloric acid, so long as bubbles of carbonic acid are given off; this dissolves out most, or all, of the carbonate of lime, which usually is encrusted on coins. Secondly, they are placed in a strong solution of common salt, with a piece of clean sheet zinc on either side; this galvanically reduces all the chloride, sulphide, or other compounds of silver (and any copper) in the coins to the metallic state: the end of this stage is shown by gelatinous oxide or carbonate of zinc being formed in the liquid, and the coins must now be tenderly handled, as the reduced silver is often quite loose. Thirdly, they are washed as soon as the zinc is removed, and placed in acetic acid so long as any bubbles are formed; this dissolves any carbonate of lime fresh exposed, and carbonate or oxide of zinc, and any scraps of zinc that might become detached, without any risk of attacking the finely-divided reduced silver. Fourthly, they are washed; any silver which has become detached is placed on the face of the coin to which it belongs, and all the coins are baked at well over boiling point. Fifthly, so soon as they are cool they are weighed, thus ascertaining the exact weight of the coin when buried. Sixthly, the scale of reduced silver is then pushed off; very generally it can be taken off with the finger-nail, or, at the worst, it flakes off freely with an iron point without touching the face of the coin. If obstinate, a touch of strong nitric acid soaks the porous silver, and loosens it without affecting the denser silver of the coin below. In case any undissolved carbonate of lime should be found below, and the weight of that coin in particular is needed, it should be weighed again; then dissolve the lime with acetic acid, and weigh again, to find the amount to be subtracted from the fifth stage above. It is impracticable to try to collect the scaled-off silver sufficiently carefully to weigh it; much of it flies off in powder on brushing the coin. This process will leave a far smoother face to silver that is much corroded than the usual dissolving of the chloride in ammonia, and it enables the original weight of the coin to be ascertained.

90. The following arrangement of the weights, attributing them to different standards, is almost entirely based on their internal evidence, as there

[2] M is a convenient abbreviation for a thousandth of an inch, lineal, square, or cubic.

are but few of them with any marks. To discriminate between the different standards, the first and most direct test is that of weight; but it often happens that two different standards will have examples that are somewhat erratic, and thus really each nearest to the standard to which they do not belong. The greatest help in this test is by referring to curves of the distribution of the examples of each standard. On turning to plate xxiv., there will be seen at the bottom a series of spots placed each at a point of the scale of grains corresponding to the unit of weight shown by one of these weights; the level of the spot showing what multiple of the unit in question is shown by that particular weight. Having thus marked down all the weights in this way, if we want to grasp the nature of their variations, we count the number occurring in a one-grain space —say between 144 and 145 grains—and place a mark at a corresponding height in that space; then doing this in each grain space, and drawing a curve through these marks, we see the relative frequency of the weights of any particular values, and the character of their distribution. Where two of these curves come together, i.e. where two different units vary so much that their examples become mixed and confused, it is plain that we cannot rely on the weight of the examples to determine their standard. Other criteria then come into use—the nature of the multiples, the form, and the material.

The different classes of multiples—binary, decimal, or sexagesimal—are of particular use in many cases. Triple multiples or fractions of the Egyptian *kat*, for instance, are rarely, if ever, found: it is true that no less than twelve have been published as such; but as only three of the twelve yield a *kat*, within the range of variation of the other and certain examples, it is clear that the other nine belong really to some other standards. Triple multiples of the Attic drachma are rare, and weights of six or twelve drachmæ are unknown. The Assyrian shekel, on the contrary, is often found in multiples of three, but is not decimally divided.

91. The forms of weights are a test of less certainty than the multiples, as it might often be the case that a man made foreign weights on the models with which he was familiar. Thus barrel weights are found among the kats occasionally, and dome-topped weights among the shekels. But in general each standard has its own special types of form. The Egyptian kat is generally dome-topped, tapering in well to the base, and with a rather sharp edge where the dome meets the side. The Assyrian shekel is specially found of the barrel form, flattened on one side, in Syria, but not in Egypt, where it follows the Egyptian type, but is often somewhat rounded in its outline. The Attic standard in Egypt is generally of the Egyptian type, but rarely with the full sharp edge around the top; a typical form of it is flattened down into a semi-ellipse, without any distinct side. This type also occurs in the Phœnician standard, which is peculiar for the irregularity and bad formation of its weights; they are often rectangular and oblong. The Roman uncia is usually a sphere flattened at both poles, and with a slight equatorial bulge. The Byzantine unciæ and solidi are always square, with incised, and often inlaid, letters. The Cufic and Arabic wukiyehs and dirhems are founded on the Roman uncia type, but with a decided ridge around the body, forming, in fact, two frustra of cones, joined by the bases. The coin weights of Byzantine and Arab times are usually of coloured glass, stamped while hot.

92. The materials are of some value as tests of the standard. The Egyptian rarely used a soft substance; brown basalt or grey syenite were his favourite materials; and the few instances of limestone or alabaster *kat* weights were probably made by foreigners. Bronze was not common; hæmatite is scarcely ever used, though hard. The Assyrian shekels are generally of bronze, and often of alabaster and limestone; in Syria they are typically made of hæmatite, black, grey, and brown. The Attic weights are generally in hard stone in Egypt, but often of the characteristic Greek mate-

rial, lead; quantities of such are found at Alexandria. The Byzantine and Cufic weights are always of brass, excepting the glass coin weights.

93. The distribution of the examples of form and of material in each standard is shown to the eye in the diagrams on pl. xxiii. Each standard has a vertical column, and the sum total of the lines across each column in either the form or the material diagram is always the same, equal to the width of two columns; thus, a line reaching just across a column shows that 50 % of all the examples of that standard are of one particular form or material. The lines represent percentage or proportionate number, and not the absolute number of examples. The forms were classified as follows, referring to the numbers in the plates of forms (pl. xxi. xxii.):—Irregular, fig. 1 to 7, 83, 86; rounded, 8 to 12; discoid (quite flat top and bottom), 13 to 16; sub-domed (a flat dome on top, or quite flat, but with sloping sides), 17, 18, 21 to 24, 28 to 31, 35; domed (with a clear dome and distinct edge to it, sides upright or sloping), 19, 20, 25 to 27, 32 to 34; dome (a dome with more or less side below, but no distinct edge), 36 to 43, 81, 82, 85; segment (flat below, and a single curve above), 44 to 47; barrel, 48 to 53, 88 to 90; cube (rounded or sharp), 54 to 57, 87; square, 58 to 61; rectangle, 62 to 65; tapering (rectangular in plan), 66, 67; sheet (irregular, generally), 68 to 70; ovoid (derived from the duck type), 77 to 80). Where a form was catalogued as being intermediate between such classes, it is entered half to one and half to the other. The last column of the Persian siglos is but dubious, owing to the small number of examples; but the others are based on sufficient instances to give a fair average illustration of their usual arrangement at Naukratis. It will be observed how the Egyptian domed type rules in every class, and to get the characteristics of each class we must look to the other forms. The kat never occurs rectangular, and very rarely square or cubic; whereas the Phœnician shekel is commonly of these forms or irregular. Again, the Æginetan drachma and the eighty-grain standard are far more commonly discoid than others. Again, the Attic drachma is more commonly of the rounded or dome type than any other standard is. In materials we may see the Egyptian preference for hard materials, while the Assyrian shekel is much more commonly of bronze than of stone, and the Phœnician shekel shows the same preference, and the Æginetan drachma is similar. The Attic drachma, on the other hand, is more usually made in hard stone, but with a tendency to lead more than in any other unit, a tendency which became fully shown in the Attic weights of Alexandria. Limestone (which includes all coloured marbles) is always commoner than alabaster.

94. We will now enter on the general catalogue of the weights. They are numbered throughout, for reference in the table, but not on the actual weights, as they can be always identified most readily by the value of the unit. The numbers in heavier type show that there is some note on that number in the notes following the list. The material is next stated, and the colour when necessary (br. = brown, bl. = black, gn. = green, gr. = grey, rd. = red, pk. = pink); the distinction of basalt into black and brown refers as much to the texture as the colour, the brown being usually soft, crystalline, and porous, and the black being harder and taking a polish. The syenite includes any mixtures of hornblend and felspar or similar substances, merging at last into a very fine-grained porphyry; quartz is generally scarce in it, and hence its absence can hardly be a deciding point in the naming. The sandstone is a hard, yellow-brown quartzite sandstone. The limestone includes all varieties, white and soft, hard, veined and coloured, which are distinguished in the notes. Where L occurs after bronze, it shows that the bronze is hollow and filled with lead. These leaded weights are frequent, and sometimes the bronze case is not entirely filled; in such instances it is hard to say whether the weight was intended to be fraudulent

or not; but it was probably a style of manufacture to allow of the weight being made to any required standard and adjusted easily, since the lead generally nearly fills the hollow, so that the resulting specific gravity of the whole mass would be about the same as if it were of bronze throughout. The hole for filling is circular.

Next comes the column showing the form, by reference to the number in the plates of forms of weights (pl. xxi. xxii): where, as is generally the case, the weight is intermediate between two types of forms illustrated, the numbers of both the types of which it partakes are given together. Then follows the present weight in British grains.[3] Next the amount of change that has taken place in the weight (headed ch.); but as such can be found by taking the difference of the column on either side of this, the entry is only made in those cases where the change exceeds 2% or $\frac{1}{50}$th of the whole, so as to warn the student at a glance that the result cannot be trusted for accuracy. The reason for adopting this limit of $\frac{1}{50}$th is that the estimates of change which has taken place may be pretty safely trusted not to be as much as half or double their amount in error; and as a change of $\frac{1}{100}$th in the value of the unit deduced from a weight would seriously affect the position of it in relation to other examples, we may safely say that we only include trustworthy material by taking those weights whose changes are less than $\frac{1}{50}$th. This is one great use of the estimate of changes; they enable students who cannot examine the originals to see at a glance how far the original value found can be trusted. In some cases of metal weights there has been both gain and loss, which may just balance; in these the difference of present and ancient weights will not be then a gauge of the accuracy of our knowledge of the ancient weight; the *sum* of the gain and loss is therefore given in the column "ch." in such instances. There are also the following cases in which the gain and loss balance, but which do not amount to $\frac{1}{50}$th together, and are therefore not entered in the table:—No. 192, change 2·5; 202, 4; 263, 28; 384, 4; 437, 5; 440, 2; 479, 3; 496, 3; 497, 4; 499, 2; 509, 2; 510, 2 grains. B in this column shows that the weight is broken. The columns showing the multiples of the unit of weight, and the resulting value for the standard unit, do not need any explanation.

[3] The most convenient method of reducing grains to grammes is by 108 grains equalling 7 grammes; thus an easy multiplication and division will reduce one to the other standard, within 1 in 4000.

EGYPTIAN KAT STANDARD (158).

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
1	Basalt, gn.	32—33	273·6		273·6	2	136·8
2	Syenite, gr.	20	685·8		685·8	5	137·2
3	Basalt, br.	33	2738·4		2752	20	137·6
4	Basalt, br.	24—26	1370·9		1377	10	137·7
5	Basalt, bl.	33	276·0		276·0	2	138·0
6	Bronze	92	138·8		138·0	1	138·0
7	Syenite, bl.	37—40	2759·6		2763·	20	138·1
8	Basalt, br.	21—39	276·5		276·5	2	138·2
9	Basalt, br.	12	1383·1		1383·1	10	138·3
10	Syenite, bl.	38	276·8		276·8	2	138·4
11	Limestone	31	138·4		138·5	1	138·5
12	Alabaster	26—27	691·9		693·3	5	138·7
13	Syenite	27—35	277·5		277·6	2	138·8
14	Syenite, gr.	33	138·9		138·9	1	138·9
15	Basalt, bl.	27—33	138·9		138·9	1	138·9
16	Syenite, bl.	27	69·5		69·5	½	139·0
17	Bronze	25—36	709·3	14	695·	5	139·0
18	Basalt, br.	34	6953		6953	50	139·1
19	Limestone	22—23	69·6		69·6	½	139·2
20	Basalt, bl.	37	6968		6971	50	139·4
21	Basalt, br.	38	2787·8		2788·3	20	139·4
22	Basalt, bl.	38—44	69·7		69·7	½	139·4
23	Limestone	25—33	27,615·		27,900·	200	139·5
24	Limestone	20	268·3	11	279	2	139·5
25	Basalt, br.	18—38	2791·8		2794	20	139·7
26	Basalt, br.	18—38	2798·7		2798·7	20	139·9
27	Serpentine	19—23	2758·2		2798	20	139·9
28	Alabaster	36—44	699·5		699·5	5	139·9
29	Sandstone	38	1398·7		1400	10	140·0
30	Alabaster	38	1372·0	28	1400	10	140·0
31	Bronze	33	720·9	21	700	5	140·0
32	Bronze	33	77·1	63	140	1	140·
33	Syenite, bl.	38	139·8		140·0	1	140·0
34	Bronze	33	139·9	14	140·0	1	140·
35	Bronze, bl.	52	26·0	2	28·0	½	140·
36	Basalt, br.	23—33	280·4		280·4	2	140·2
37	Basalt, br.	23	1399·4		1403·3	10	140·3
38	Basalt, gn.	18	280·8		281·0	2	140·5
39	Syenite, bl.	18	699·0		703·0	5	140·6
40	Basalt, br.	18	6333·	B	7040	50	140·8
41	Bronze	33	699·7		704·0	5	140·8
42	Granite, red	20—23	70,440		70,440	500	140·9
43	Basalt, bl.	23—27	702·5		704·5	5	140·9
44	Limestone	60	1342·7	70	1410	10	141·0
45	Syenite, gr.	33	282·1		282·1	2	141·1
46	Basalt, br.	39	1412·0		1414·2		141·4
47	Bronze	33	284·1		282·7		141·4
48	Basalt, br.	33	283·0		283·0		141·5
49	Basalt, bl.	27	2827·8		2831·5		141·6
50	Hæmatite, br.	1	283·4		283·4		141·7
51	Basalt, bl.	33	28,140		28,400	200	142·0
52	Limestone	11—12	2827·8		2840	20	142·0

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
53	Basalt, br.	26—33	283·2		284·0	2	142·0
54	Bronze	26	144·0	2	142·	1	142·
55	Syenite, bl.	40	284·2		284·2	2	142·1
56	Alabaster	25	1399·2		1422	10	142·2
57	Basalt, br.	12	704·7		711	5	142·2
58	Hæmatite, br.	9—39	707·5		711·5	5	142·3
59	Syenite, gn.	59	7110·		7117·	50	142·3
60	Bronze, L.	36	709·7		712·	5	142·4
61	Basalt, br.	44,100	570·7		570·7	4	142·7
62	Limestone	38	1427·5		1428·0	10	142·8
63	Alabaster	16—35	713·6		714·0	5	142·8
64	Syenite, bl.	38	1428·0		1428·6	10	142·9
65	Syenite	27	285·8		285·8	2	142·9
66	Bronze	32—33	287·5		286·0	2	143·0
67	Basalt, bl.	25—33	141·3		143·0	1	143·0
68	Syenite, bl.	12—18	1431·0		1431·0	10	143·1
69	Basalt, bl.	20	714·2		715·7	5	143·1
70	Basalt, bl.	27—33	286·6		286·6	2	143·3
71	Syenite	27	719·1		717·5	5	143·5
72	Syenite, gn.	8	2872·8		2872·8	20	143·6
73	Limestone	27—30	143·7		143·8	1	143·8
74	Basalt, br.	27	287·3		287·8	2	143·9
75	Basalt, bl.	26—27	143·9		143·9	1	143·9
76	Basalt, br.	27	717·8		719·9	5	144·0
77	Pyroxene, gn.	18	144·0		144·0	1	144·0
78	Bronze	43	76·2	4	72	½	144·
79	Basalt, br.	27—33	1436·5		1441	10	144·1
80	Syenite, bl.	19—39	7138		7210	50	144·2
81	Basalt, bl.	33	288·4		288·4	2	144·2
82	Basalt, bl.	25—33	2877·1		2890	20	144·5
83	Basalt, br.	26—33	144·6		144·5	1	144·5
84	Sandstone	36	2891·9		2893·	20	144·7
85	Bronze	20—40	143·2		144·7	1	144·7
86	Basalt, bl.	38—39	1448·6		1448·9	10	144·9
87	Syenite	23—27	289·7		289·7	2	144·9
88	Limestone	8—19	289·8		289·8	2	144·9
89	Bronze	47	72·7		72·5	½	145·
90	Basalt, br.	33—34	7243		7248	50	145·0
91	Basalt, br.	33	8292	B	14,500	100	145
92	Basalt, br.	27	2600·1	B	2900	20	145
93	Granite, gr.	39	2826·5		2890	20	145·0
94	Bronze, bl.	52	27·2	2	29·0	½	145
95	Basalt, bl.	26—27	145·1		145·1	1	145·1
96	Basalt, br.	33	6768	B	7270	59	145·4
97	Porphyry, gr.	54	2907·0		2907·5	20	145·4
98	Basalt, br.	37—38	727·0		727·0	5	145·4
99	Hæmatite, bl.	11	727·2		727·2	5	145·4
100	Syenite, gr.	27	727·0		727·0	5	145·4
101	Porphyry, gn.	81	727·6		727·6	5	145·5
102	Syenite, bl.	40—43	2908·3		2912·	20	145·6
103	Basalt, br.	27—33	2913·3		2915·	20	145·7
104	Basalt, bl.	18—19	2916·2		2916·2	20	145·8
105	Basalt, bl.	26—33	145·8		145·8	1	145·8
106	Basalt, br.	16	2910·3		2920·	20	146·0
107	Bronze	33—40	638·7	90	730	5	146
108	Basalt, bl.	26—33	292·5		292·4	2	146·2
109	Syenite, bl.	8	731·4		731·6	5	146·3
110	Basalt, bl.	25—33	292·5		292·5	2	146·3
111	Limestone	20—40	1439·6		1465	10	146·5
112	Basalt, bl.	27—33	292·9		293·0	2	146·5
113	Basalt, bl.	27—33	2933·5		2934·5	20	146·7
114	Basalt, br.	27—35	734·1		734·6	5	146·9
115	Limestone	27—40	818·5	B	1470	10	147
116	Basalt, bl.	40—44	147·1		147·1	1	147·1
117	Basalt, br.	33—37	2943·0		2944·5	20	147·2
118	Basalt, bl.	27	294·4		294·4	2	147·2
119	Bronze, bl.	51—52	30·0		29·5	½	147·5
120	Basalt, bl.	38	285·1		285·1	2	147·6
121	Basalt, br.	33	147·6		147·6	1	147·6
122	Limestone	40	7324		7390	50	147·8
123	Syenite, br.	38	1476·6		1478·5	10	147·8
124	Syenite, bl.	82	738·8		738·8	5	147·8
125	Basalt, br.	33	294·9		295·6	2	147·8
126	Limestone	32	445·8	B	740	5	148
127	Basalt, bl.	33	74·0		74·0	½	148·0
128	Syenite, gr.	33	1480·6		1480·9	10	148·1
129	Syenite, bl.	2	7408		7408	50	148·2
130	Syenite, gr.	43	1482·3		1482·3	10	148·2
131	Basalt, br.	33—40	7289		7420	50	148·4
132	Syenite, gr.	39	741·8		741·8	5	148·4
133	Basalt, br.	33	74·3		74·3	½	148·6
134	Basalt, bl.	25	742·9		743·9	5	148·8
135	Alabaster	38—43	74·1		74·4	½	148·8
136	Bronze	38	74·7		74·4	½	148·8
137	Syenite, gr.	8—11	2910·1	70	2980	20	149·
138	(Stone) br.	41	148·9		149?	1	149?
139	Basalt, br.	27	2980·9		2983	20	149·1
140	Basalt, bl.	33	2975·4		2982	20	149·1
141	Basalt, bl.	23	2978·1		2982	20	149·1
142	Basalt, bl.	83	746·2		746·2	5	149·2
143	Syenite, gr.	33	7466		7469	50	149·4
144	Basalt, br.	23—27	7388		7490	50	149·8
145	Syenite, gn.	38	2995·1		2997	20	149·8
146	Basalt, bl.	33	298·7		299·6	2	149·8
147	Basalt, bl.	33	149·8		149·8	1	149·8
148	Bronze, L.	33—37	709·0	40	750	5	150
149	Basalt, bl.	33	299·6		300·0	5	150·0
150	Basalt, bl.	27—33	75·2		75·2	½	150·4
151	Bronze	40	303·0		301·	2	150·5
152	Granite, red	26	75,290		75,290	500	150·6
153	Basalt, bl.	33	300·4		301·2	2	150·6
154	Syenite, pk.	27—37	3013·5		3016·0	20	150·8
155	Syenite, bl.	41	75·4		75·4	½	150·8
156	Syenite, gr.	31—33	302·6		302·6	2	151·3
157	Bronze	32	303·2		305	2	152·5
158	Bronze	25—27	154·3		153·	1	153·

Assyrian Shekel Standard (114).

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
159	Bronze (95)	25—26	117·1		116·6	1	116·6
160	Bronze	40	20·1	·6	19·5	½	117·
161	Bronze	44	61·5	3·	58·5	½	117·0
162	Bronze	41	60·0		59·0	½	118·0
163	(Stone) red	88	59·1		59·2	½	118·4
164	Bronze	26	60·8	1·4	59·4	½	118·8
165	Bronze	25—26	117·3	4	119	1	119·
166	Alabaster	18—71	598·0		598·0	5	119·6
167	Marble	29	594·3		599	5	119·8
168	Limestone	38	121·4		121·4	1	121·4
169	Bronze	26	61·7		60·7	1	121·4
170	Bronze	32	60·4	1·7	60·7	½	121·4
171	Basalt, br.	48	2429·7		2430·4	20	121·5
172	Bronze, L.	57	613·6	14	608	5	121·6
173	Bronze	33—37	123·3		121·6	1	121·6
174	Basalt, br.	25	2424·7		2437	20	121·8
175	Alabaster	23—27	609·4		609·6	5	121·9
176	Bronze	25	122·6		122·0	1	122·0
177	Bronze	33	58·4	2·6	61·0	½	122·0
178	Bronze	43	20·5		20·4	½	122·4
179	Bronze	38—43	21·9	1·5	20·4	½	122·4
180	Syenite, bl.	42	245·1		245·1	2	122·6
181	Basalt, br.	23—27	611·5		613·6	5	122·7
182	Basalt, bl.	44	33,090	B	37,000	300	123
183	Alabaster	45	61·6		61·6	½	123·2
184	Bronze	43	33·8	3·	30·8	¼	123·2
185	Syenite, bl.	8—38	3699·3		3701·0	30	123·4
186	Diorite	18—42	3684·7		3704·	30	123·5
187	Limestone	46	61·4		61·8	½	123·6
188	Bronze	37—40	577·7	42	620	5	124·
189	Basalt, bl.	25—33	242·6	5·4	248·	2	124·0
190	Bronze	66	127·7	4	124·	1	124·
191	Bronze	26	125·7		124·0	1	124·0
192	Bronze, L.	26	249·3		249	2	124·5
193	Bronze	51	24·9	1	24·9	½	124·5
194	Limestone	19—33	592·8	32	623	5	124·6
195	Alabaster	12—24	622·4		622·8	5	124·6

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
196	Bronze	57	251·3		249·6	2	124·8
197	Bronze	66	1207·1	43	1250	10	125·
198	Bronze	19—27	238·6	11	250	2	125·
199	Bronze	26—33	238·4	13	251	2	125·5
200	Basalt, br.	38	1504·5		1507	12	125·6
201	Porphyry, gn.	4—7	3773·5		3773·5	30	125·8
202	Bronze	33—40	630·6	*	629·	5	125·8
203	Limestone	27	2509·6		2520	20	126·0
204	Limestone	14	756·5		756·0	6	126·0
205	Lead	63	385·4	36	378	3	126·
206	Bronze	25	20·8	5	21·0	⅙	126·
207	Basalt, br.	33	1259·2		1261·6	10	126·2
208	Limestone	31	249·9		252·5	2	126·2
209	Basalt, bl.	36	63·1		63·1	½	126·2
210	Basalt, br.	12—27	252·9		252·9	2	126·5
211	Bronze	37	124·0		126·5	1	126·5
212	Basalt, br.	33	1517·1		1519·3	12	126·6
213	Bronze, L.	33	1281·0		1267	10	126·7
214	Alabaster	23—27	252·2		253·4	2	126·7
215	Basalt, bl.	12	2527·2		2536	20	126·8
216	Alabaster	39	126·5		126·8	1	126·8
217	Limestone	18—23	126·8		126·8	1	126·8
218	Basalt, br.	38—41	761·6		761·6	6	127·0
219	Bronze	25	128·4	4	127·	1	127·
220	Limestone	78	1906·3		1906·9	15	127·1
221	Bronze	33—40	611·7	24	636	5	127·2
222	Bronze	83—84	22·6	1·4	21·2	⅙	127·2
223	Bronze	26	10·9		10·6	1/12	127·2
224	Basalt, gn.	33	7633		7636	60	127·3
225	Syenite, bl.	27—33	254·6		254·6	2	127·3
226	Alabaster	18—27	254·9		254·9	2	127·5
227	Limestone	6	255·3		255·3	2	127·7
228	Alabaster	18—27	639·0		639·0	5	127·8
229	Alabaster	18	638·8		639·1	5	127·8
230	Bronze	66	656·0	16	640	5	128·0
231	Hæmatite	1—2	128·0		128·0	1	128·0
232	Bronze	43	128·7	2½	128·	1	128·
233	Bronze	25	6·0	10	16 ?	⅛	128 ?
234	Basalt, bl.	12	1281·2		1283·0	10	128·3
235	Basalt, br.	14—19	641·0		641·7	5	128·3
236	Syenite, bl.	27—37	1537·1		1541	12	128·4
237	Bronze	33	659·0	23	642	5	128·4
238	Limestone	79	1283·7		1285·2	10	128·5
239	Bronze	13—25	65·8	1·5	64·3	½	128·6
240	Basalt, br.	11	638·4		643·5	5	128·7
241	Bronze	66	388·6		386	3	128·7
242	Basalt, br.	33—40	259·4		259·4	2	128·7
243	Limestone	64	128·7		128·7	1	128·7
244	Bronze	40	764·5		773	6	128·8
245	Bronze	40	634·6		644	5	128·8
246	Limestone	14	1285·1		1289	10	128·9
247	Basalt, bl.	27	128·9		128·9	1	128·9
248	Bronze	37	139·9	60	129	1	129
249	Basalt, bl.	23—27	2578·1		2582	20	129·1
250	Limestone	33	30,970		31,020	240	129·3
251	Basalt, br.	38	646·5		646·5	5	129·3
252	Limestone	27—33	127·7		129·5	1	129·5
253	Limestone	13	1296·1		1296·0	10	129·6
254	Bronze	25—29	11·1	·3	10·8	1/12	129·6
255	Sandstone	2	15,550		15,570	120	129·8
256	Basalt, br.	33—37	1297·9		1298·0	10	129·8
257	Basalt, bl.	27	129·9		129·9	1	129·9
258	Bronze	57	130·2	2½	130·0	1	130·0
259	Bronze	33	121·4	9	130·	1	130·
260	Bronze	37	654·8		652·	5	130·4
261	Limestone	49	260·5		260·9	2	130·4
262	Bronze	25	16·5		16·3	⅛	130·4
263	Bronze	67	3915·0		3923·	30	130·8
264	Bronze	57	264·1		262·0	2	131·0
265	Bronze	frog	136·3	5	131·	1	131·
266	Basalt, bl.	33	7871·		7872·	60	131·2
267	Basalt, br.	80	657·7		658·3	5	131·7
268	Bronze	63—66	139·2	7	132·	1	132·
269	Bronze	51	33·0	1·5	33·0	¼	132·0
270	Bronze	57	29·5	3·5	33·	¼	132·
271	Bronze	51—52	26·8		26·4	¼	132·
272	Bronze	66	339·5	12	334·	2½	133·6

ATTIC DRACHMA STANDARD (87).

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
273	Alabaster	58	639·0		639·0	10	63·90
274	Bronze	58	136·6	7·6	129	2	64·5
275	Lead	64	126·0	11	129	2	64·5
276	Lead	60—69	656·7	130	647	10	64·7
277	Syenite, bl.	27—33	1622·5		1623·0	25	64·92
278	Basalt, br.	27—40	3131·9	120	3250	50	65·0
279	Limestone	26	65·0		65·0	1	65·0
280	Syenite, bl.	4—11	6495		6502	100	65·02
281	Syenite	12—43	6511		6519	100	65·19
282	Basalt, br.	11	2607·6		2608·6	·40	65·21
283	Basalt, br.	32	6523		6529	100	65·29
284	Limestone	27—38	643·9		653	10	65·3
285	Basalt, br.	27	1632·1		1634·5	25	65·38
286	Bronze	40	31·9	·8	32·7	⅛	65·4
287	Basalt, br.	18—27	6512		6547	100	65·47
288	Bronze	58	1326·6		1310	25	65·5
289	Basalt, bl.	19—27	262·3		262·5	4	65·62
290	Basalt, br.	11	2628·1		2629	40	65·72
291	Basalt, bl.	19—27	6570·4		6582	100	65·82
292	Limestone	39	6588·5		6586 ?	100	65·86
293	Basalt, bl.	30	658·8		658·9	10	65·89
294	Limestone	32—40	658·5		659·0	10	65·90
295	Basalt, bl.	12—23	2631·5		2637	40	65·92
296	Limestone	12—14	2521·6	120	2640	40	56·00
297	Lead	62	606·7	50	660	10	66·0
298	Lead	64—70	228·3	180	330	5	66·
299	Limestone	38	330·0		329·9	5	66·00
300	Lead	63	153·5	50	133	2	66·
301	Basalt, bl.	38	132·0		132·0	2	66·0
302	Bronze	69	121·8	16	132	2	66·
303	Bronze	34—37	134·2		132	2	66·0
304	Syenite, gr.	3—12	5278·7		5283	80	66·04
305	Syenite, bl.	36	6608		6609	100	66·09
306	Limestone	8	198,280		198,300	3000	66·10
307	Syenite	36—37	6574		6626	100	66·26
308	Bronze, L.	26—27	1332·2		1326	20	66·3
309	Bronze	26	268·5		265·5	4	66·37
310	Basalt, br.	18—38	1327·5		1327·5	20	66·38
311	Basalt, br.	39	1657·9		1660·	25	66·40
312	Syenite, gr.	37—38	2658·1		2660·	40	66·50
313	Limestone	18	659·7		665	10	66·5
314	Basalt, bl.	26—27	133·0		133·0	2	66·5
315	Basalt, br.	19	665·9		666·3	10	66·63
316	Lead	62	647·6	20	667	10	66·7
317	Basalt, bl.	18	667·3		667·8	10	66·78
318	Basalt, bl.	18	2665·7		2673	40	66·82
319	Basalt, br.	26—28	1335·3		1336·8	20	66·84
320	Syenite, gn.	77	6695		6697	100	66·97
321	Basalt, bl.	18—37	6644		6700	100	67·0
322	Basalt, bl.	12—40	1336·0		1340	20	67·0
323	Bronze	60	68·8	1·8	67·0	1	67·0
324	Syenite, gr.	11—38	2676·8		2681·4	40	67·03
325	Alabaster	23	132·1		134·2	2	67·1
326	Alabaster	38	134·2		134·2	2	67·1
327	Basalt, br.	38	6719		6719	100	67·19
328	Basalt, bl.	29	6680		6735	100	67·35
329	Basalt, bl.	27—33	1671·9		1684	25	67·36
330	Basalt, bl.	11—40	1347·3		1347·3	20	67·36
331	Syenite, gn.	32	134·7		134·7	2	67·4
332	Bronze	90	331·1		337	5	67·4
333	Limestone	8—44	201,380		202,400	3000	67·47
334	Basalt, bl.	23—27	3362·6		3374	50	67·48
335	Alabaster	12—43	6705		6754	100	67·54
336	Basalt, bl.	33	3370·9		3379	50	67·58
337	Basalt, br.	11—12	2707·8		2708	40	67·70
338	Limestone	16, 93	671·4		677	10	67·7

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
339	Bronze	37	264·4	5·6	270	4	67·7
340	Lead	68—70	265·3	26	271	4	67·7
341	Basalt, br.	18—27	1295·0	60	1355	20	67·75
342	Bronze	26	44·8		45·2	⅔	67·8
343	Syenite, br.	38	6796		6797	100	67·97
344	Alabaster	38	649·2	30	680	10	68·0
345	Lead	70	40·7	7	34	½	68·
346	Basalt, bl.	38	136·1		136·1	2	68·05
347	Basalt, bl.	23—27	1358·9		1362·4	20	68·12
348	Basalt, bl.	23—27	2721·9		2727·	40	68·17
349	Syenite, br.	11—38	681·2		681·7	10	68·17
350	Basalt, bl.	11—38	681·4		682·0	10	68·20
351	Lead	68	273·2	8	273	4	68·2
352	Limestone	26—29	681·3		682·3	10	68·23
353	Limestone	11—38	273·1		273·1	4	68·33
354	Bronze	33	22·9		22·8	⅓	68·4
355	Basalt, bl.	25—27	6838		6848	100	68·48
356	Bronze	12—25	130·5	6·5	137	2	68·5
357	Limestone	23—27	69·4		69·4	1	69·4
358	Bronze	25	23·9	4	24	⅓	72·
359	Bronze	26	12·7	·3	12·4	⅙	74·4

PHŒNICIAN SHEKEL STANDARD (55).

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
360	Bronze	16,98	16·8		16·7	1/12	200·4
361	(Stone), bl.	56	1766·2		1766·2	8	208·3
362	Basalt, bl.	20	17·4		17·4	1/12	208·8
363	Basalt, bl.	16	4144·8		4190	20	209·5
364	Bronze	26—33	65·9	65	105	½	210
365	Alabaster	35	73·7	31	105	½	210
366	Alabaster	25	105·4		105·6	½	211·2
367	Bronze	25	26·4	4·	26·4	⅛	211·2
368	Sandstone	2—11	51,040		51,100	240	212·9
369	Bronze	24—26	436·1	10	426·	2	213·
370	Bronze	25	110·4	3·4	107	½	214·
371	Marble	65	831·6	30	860	4	215·
372	Bronze	33	52·9		54·1	¼	216·4
373	Bronze	65	1709·5		1740	8	217·5
374	Basalt, bl.	33	27·2		27·2	⅛	217·5
375	Basalt, br.	11—19	435·2		435·2	2	217·6
376	Bronze	36	190·7	57	218	1	218
377	Bronze	36	20·2	2	18·2	1/12	218·4
378	Bronze	25	112·0	2·5	109·5	½	219·
379	Lead	86	2521·8	320	2200	10	220
380	Limestone	5	442·7		442·7	2	221·3
381	Bronze	21—35	230·4	17	222·	1	222·
382	Bronze	57	76·0	2	74·0	⅓	222·
383	Bronze	25, 97	18·7		18·5	1/12	222·
384	Bronze	64—67	223·8		223·	1	223·
385	Basalt, bl.	42—46	4440·0		4470·	20	223·5
386	Granite, red	5	53,980		54,130	240	225·4
387	(Stone), bl.	7	5646		5658	25	226·3
388	Alabaster	23	2646·9	B	4550	20	227·5
389	Bronze	25	61·0	4	57·	¼	228·
390	Bronze	40	54·3	3	57·	¼	228·
391	Syenite, bl.	3	1824·3		1825·	8	228·1
392	Basalt, bl.	27—40	457·0		457·0	2	228·5
393	Alabaster	20—40	227·0		228·5	1	228·5
394	Bronze	18—38	38·8		38·3	⅛	229·8
395	Bronze	25	112·5	3	115 ?	½	230 ?
396	Syenite, bl.	4	5697·5		5770	25	230·8
397	Bronze	66	230·3	10	231·	1	231·
398	Bronze	66	80·8	4	77·0	⅓	231·
399	Bronze	53	39·5	1	38·5	⅙	231·
400	Limestone	37	115·6		115·6	½	231·2
401	(Stone), bl.	65	924·9		926·2	4	231·6
402	Bronze	58	121·0	5	116·	½	232
403	Bronze	66, 96	131·9	16	116·	½	232
404	Limestone	18	231·7		232·9	1	232·9
405	Syenite, gr.	42—46	4649·5		4676	20	233·8
406	Bronze	23—33	1145·0	32	1170	5	234·0
407	Lead	64—65	232·9	15	234	1	234·
408	Bronze	26	125·7	9	117·	½	234·
409	Limestone	44	584·8		585·6	2½	234·2
410	Bronze	33—37	250·3	15	235·	1	235·
411	Bronze	33—37	231·6		235	1	235·
412	Basalt, br.	23	10,088·	B	11,800	50	236·0
413	Alabaster	23—27	2748·7	B	11,850	50	237·
414	Bronze	66	82·6	3·6	79·0	⅓	237·

ÆGINETAN DRACHMA STANDARD (37).

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
415	Lead	62—68	328·3	100	350	4	87·5
416	Bronze	26—33	353·5		351	4	87·6
417	Bronze	62—70	180·9	4	177	2	88·5
418	Bronze, L.	33	579·0	42	537	6	89·5
419	Limestone	43	45·1		45·1	½	90·2
420	Bronze	89	50·3	4	46·0	½	92·0
421	Lead	60	215·6	80	185	2	92·5
422	Marble	15	1116·0		1116·0	12	93·0
423	Bronze	33—40	379·0	9	376·	4	94·0
424	Bronze	33—37	101·1	7	94·	1	94·
425	Limestone	15	188·2		188·5	2	94·3
426	Limestone	15	94·7		94·7	1	94·7
427	Syenite, gr.	12—15	23·7		23·7	¼	94·8
428	Bronze	24	768·1		760·	8	95·0
429	Basalt, bl.	33	47·5		47·5	½	95·0
430	Basalt, bl.	32	23,770		23,770	250	95·1
431	Basalt, bl.	20	23·8		23·8	¼	95·2
432	Basalt, bl.	26—27	23,860		23,880	250	95·5
433	Basalt, bl.	38—39	573·5		573·5	6	95·6
434	Syenite, gr.	84	48·0		48·0	½	96·0
435	(Stone), bl.	87	776·7		777·2	8	97·1
436	Bronze	38	49·2		48·7	½	97·4
437	Bronze	33—40	391·0		390·	4	97·5
438	Bronze	34—37	406·1	26	390·	4	97·5
439	Lead	60	3820·8	99	390·5	40	97·6
440	Bronze	32—34	391·5		390·5	4	97·6
441	Basalt, br.	27	4882·8		4883	50	97·7
442	Basalt, bl.	32—33	779·3		781·5	8	97·7
443	Syenite, gr.	9—10	4879·6		4890	50	97·8
444	Limestone	1—41	780·1		783·0	8	97·9
445	Basalt, bl.	9	3917·6		3917·6	40	97·9
446	Bronze, L.	25	397·7		392·	4	98·0
447	Bronze, L.	26—27	394·8		392·	4	98·0
448	Alabaster	23	3877·0		3925	40	98·1
449	Basalt, bl.	27—33	786·4		787·5	8	98·4
450	Alabaster	58	787·1		790·	8	98·7
451	(Stone), bl.	65	797·4		798·0	8	99·7

(EIGHTY GRAIN STANDARD) (35).

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
452	Basalt, br.	38—39	5960·2	200	6160	80	77·0
453	Basalt, br.	33	3094·9		3098·5	40	77·5
454	Basalt, br.	17—26	77·6		77·6	1	77·6
455	Limestone	22	155·1		155·3	2	77·6
456	Basalt, bl.	10—40	6148		6230·	80	77·9
457	Bronze	10—37	94·3	16	78·	1	78·
458	Syenite, bl.	10	3124·0		3125·0	40	78·1
459	Syenite, gr.	55	1954·1		1956·0	25	78·2
460	Syenite, gr.	25—33	6264·0		6264	80	78·3
461	Syenite, gr.	85	3135·5		3135·5	40	78·4
462	Basalt, br.	27	3129·3		3137·	40	78·4
463	Bronze	20—33	161·4	4	157	2	78·5
464	Limestone	38	3145·9		3152	40	78·8
465	Syenite, bl.	15—16	315·7		315·7	·4	78·9
466	Bronze	91	314·0		316·	4	79·0
467	Basalt	29—32	6282·		6328·	80	79·1
468	Lead	60	2230·6	150	2380	40	79·3
469	Basalt, br.	12	2370·9		2381	40	79·4
470	Bronze, L.	19—27	815·9	20	795	10	79·5
471	Alabaster	21	79·5		79·5	1	79·5
472	Basalt, bl.	19—27	1594·8		1595·1	20	79·7

No.	Material.	Form.	Present.	Ch.	Ancient.	×	Unit.
473	Basalt, bl.	20—43	39·9		39·9	½	79·8
474	Alabaster	12—14	1344·7	B	2000	25	80·0
475	Basalt, bl.	23—33	1595·6		1600·2	20	80·0
476	Lead	16	198·3	4	200	2½	80·0
477	Limestone	33—37	3204·1		3210·	40	80·2
478	Glass, gn.	38—44	80·3		80·3	1	80·3
479	Bronze	60, 94	239·7		241·	3	80·3
480	Basalt, bl.	33—37	160·8		160·9	2	80·4
481	Syenite, gr.	38—40	4022·7		4025·	50	80·5
482	Basalt, bl.	33	807·5		808·0	10	80·8
483	Syenite, gr.	7—10	8083·		8092·	100	80·9
484	Limestone	8—41	2019·6		2026	25	81·0
485	Syenite, gr.	55	2035·5		2038·5	25	81·5
486	Alabaster	14	1764·8	B	8200	100	82·
	Persian Silver Siglos Standard (7).						
487	Basalt, br.	26—33	125,930	B	248,000	3000	82·7
488	Lead	60	502·8	60	500	6	83·3
489	Lead	60—69	4110·5	900	5000	60	83·3
490	Syenite, br.	27—33	10,177		10,198	120	85·0
491	Syenite, gr.	55	2124·1		2127·0	25	85·1
492	Basalt, gn.	8	5155		5155	60	85·9
493	Syenite, gr.	9—54	2161·8		2164	25	86·6
	Roman Uncia Standard.						
494	Bronze	61, 99	205·0		204·0	½	408·0
495	Bronze	71	1241·8		1235·	3	411·6
496	Bronze	71	414·8		414·0	1	414·0
497	Bronze	71—74	416·1		415·0	1	415·0
	Arabic Dirhem Standard.						
498	Bronze	72	873·2		868·0	20	43·4
499	Bronze	72	435·8		435·5	10	43·5
500	Bronze	76	438·6		436·0	10	43·6
501	Bronze	72	224·2		220·	5	44·0
502	Bronze	72	2219·2		2240·	50	44·8
503	Bronze	72	849·8	50	900	20	45·0
504	Glass	...	90·9		90·9	2	45·5
505	Glass	...	91·1		91·1	2	45·6
506	Bronze	13—72	226·4		229	5	45·8
507	Bronze	13—72	461·5		460·0	10	46·0
508	Bronze	13—72	230·6		230·0	5	46·0
509	Bronze	73	459·1		460·0	10	46·0
510	Bronze	73	461·7		461·5	10	46·1
511	Bronze	72	465·4		463·0	10	46·3
512	Glass	...	93·4		93·4	2	46·7
513	Bronze	76	470·8		468·0	10	46·8
514	Bronze	75	245·0		244·5	5	48·9
	Uncertain Standards.						
515	Sandstone	33	91,070	B	174,000		
516	Chalcedony	50	34·3		34·3		

NOTES.

1. Belongs to kat and not drachma; there is not a single drachma weight so finely formed on the domed type which is characteristic of the kat by its purity of outline.

2. Is of a type much commoner in kats than in drachmæ; also the peculiar syenite, white felspar in green-black hornblende, is only known in three other kats (Nos. 45, 100, and 156), and in one of 80-grain standard (No. 481.)

3. Is a kat for the same reasons as No. 1.

4. More of the kat than of the drachma type.

5. As 1.

6. A peculiar turned piece of bronze, never attached to anything, nor pierced; probably a weight.

7, 8 might be drachma weights by their form; but are beyond a likely range of drachmæ.

11. A peculiar limestone, brownish-white, with fine grey veining: only one other of this colouring and form, No. 208, but not from exactly the same piece of stone. I have a quarter kat from Syria (?) of the same stone, but pyramidal in form.

13. From a Ptolemaic house about the IIIrd cent. B.C., on the east side of the excavated part of the town (find 93). Burnt. With Nos. 65, 281, and 475.

19. Hard grey limestone.

23. Nummulitic limestone, very fossiliferous. Weathered surface.

24. Hard dark brown-grey limestone with holes, and a thin crust of white decomposition (?)

35. A peculiar black bronze, which throws off the oxide very freely, having a polished black face below it; only found in Nos. 94 and 119, both of this form, and perhaps No. 107.

42. Hammer dressed, without any polish; irregular below.

44. Soft white limestone, flaky.

51. A fine weight, polished, but chipped.

52. Soft white limestone; from Kom Afrin.

58. A natural pebble of hæmatite, ground down on the end of the major axis; light brown crust outside.

59. A splendid weight of very unusual form for a kat; only No. 44 like it.

61. The only weight with a name on it (see pl. xxii., fig. 100); strange to say, it has been broken off below, and ground down again to a flat bottom, rather roughly, and apparently adjusted to 4 kats. It was probably valued for the sake of the inscription, and therefore readjusted, after being accidentally broken. What its original weight was, is not clear; it is not likely that so little as a fifth of the whole was removed,

looking to the traces of fracture and the present shallowness of the weight; yet it is not likely to have lost more than half its bulk, as it would have then been exceptionally high; hence it can hardly have been either 5 or 10 kats. It is a misfortune that this has been readjusted, as it is the only weight which shows its original age—that of Aahmes.

62. Very compact hard white limestone; fine work.

63. Merely a piece of a natural sheet of alabaster, trimmed round.

65. Same house as No. 13. Burnt.

71. From a well filled with burnt earth in the middle of the S. part of the town. Probably about VIth cent. B.C. Burnt. (See No. 83.)

73. Dark grey hard limestone, white vein on one side.

77. Grey-green chatoyant pyroxene. Ptolemaic house W.N.W. of Great Temenos.

78. Found with Nos. 161 and 165, at level 400; middle of Vth cent. B.C.

83. Found with No. 71.

88. White limestone, with brown patch; hard.

90. Rough chipped around the sides.

95. See No. 35.

97. Minute felspathic crystals in a grey base, dense.

99. Iron-black hæmatite, highly polished.

101. Pale green crystals in a dark green base; common in Roman times.

107. Greyish bronze; broken in two, and part lost.

111. Hard, white, sub-crystalline limestone; same as Nos. 204 and 253.

115. Dark grey compact slaty limestone.

119. See No. 35; more carbonated than 35 and 95, not cleaning so smoothly.

122. Hard, close white limestone.

124. A rare form; I have a similar uten in diorite (bought in Cairo, 1884), of 148·07 unit, closely the same as this 147·8.

126. Hard white Mokattam limestone.

132. Very fine work, quite uninjured; green-grey syenite, polished.

138. Dark brown stone, apparently changed by contact with iron rust, and split on the surface.

143. Very fine work, of the purest domed type of fig. 33; blue-grey syenite, polished.

152. Similar to No. 42, but better worked.

156. With reference to this of black and white syenite (see No. 2), a weight similar in form, colour, and high standard (150·6) should be noted in Brit. Mus., with cartouche of Aahmes (XXVIth Dyn.) on the top.

159. This weight with the archaic Greek Σ on the top (Pl. xxii. 95), seems as if it must be attributed to the Assyrian shekel, although it is of lower standard than any other example; the letter, however, points to Siklos. If it had not been for that, it would have been attributable to the very erratic Phœnician shekel, but it would then need H for Hemi. The form of the letter points to the VIth cent. B.C.

161. See No. 78.

162. An unusual form, more like a Byzantine solidus, but there is no letter on it, which is always found on solidi.

163. Dark red stone (limestone?) very hard, but scratched by steel.

164. From burnt potter's rubbish in N. part of town; level 370. Vth cent. B.C. (?).

165. See No. 78.

167. White marble, rather soft, weathered.

168. Hard white limestone.

169. From burnt potter's rubbish in N. town. Level 280. VIth cent. B.C.

172. Hollow bronze case, about two-thirds filled with lead.

176. From long house walls, S.W. in town. Vth cent. B.C. (?).

187. Light brown and white limestone, soft.

193. From middle of E. side of town. Level 340. Early VIth cent. B.C. The fraction of one-fifth of the shekel appears to be unlikely, but there is another, No. 271, and another of the same form, but one-fourth shekel, No. 270; and the form is essentially Syrian. It will be observed that the three kat weights of this type have more ridge in the middle, and are of black bronze, unlike these. I have also a one shekel, exactly of this type, and bronze (bought in Cairo, 1885), and a bronze two shekel, pierced at one end, from Beirut.

194. Soft decaying limestone.

201. Black-green porphyry, with grey-green crystals.

203. Hard white limestone, weathering brown and smooth; Mokattam stone (?).

204. Hard white limestone (see No. 111). Found with large find of bronzes, middle of IIIrd cent. B.C.

205. Found in temenos of Apollo, with drab bowls, painted with eyes. End of VIth cent. B.C.

208. See No. 11.

213. Found with No. 237; both of fine form.

217. Soft, jet-black, highly polished, limestone. I have one similar in form and material, of 132·2 (Cairo, 1884).

220. Hard light brown limestone, good work.

222. From burnt potter's rubbish in N. town. Level 370. Vth cent. B.C. (?).

224. Fine work, and polished; slightly too low and upright sides for pure domed type.

227. Dark grey limestone pebble, ground down on under side.

230. From middle of E. side of town. Level 400. Vth cent. B.C.

237. Found with No. 213.

238. Hard pale pink limestone. I have a similar one from Thebes (1885), but rather darker, weighing 94·9, which is apparently the Æginetan drachma; but the form seems to be derived from the duck weights, and is somewhat analogous to Nos. 220 and 267.

239. From the bottom of the second chamber from the east, on the S. side of the great mound.

241. From middle of E. side of town. Level 400. Middle of Vth cent. B.C. (?).

243. Very hard greenish-grey limestone (?).

246. Hard, jet-black, highly-polished limestone. Hole in under face, to adjust by lead plugging (?).

250. Softish white limestone; fairly well made.

252. Browny-grey limestone; rather dissolved on the surface.

253. Hard browny-white limestone, brown face.

255. Certainly Assyrian by the multiple. We now reach the debatable ground of Attic and Assyrian standards.

256. Sides too straight and curves too fine to be likely to be Attic.

257. Rather too straight and regular for Attic.

258. So nearly cubic that it cannot be Attic.

259. Rather too good a form for Attic.

260. Might be an Attic form, but the material is against it.

261. Hardish dark brown-grey mottled limestone, very liable to crack. The form is distinctively Syrian, and this is the only one found here. The stone is like one from Syria.

262. Assyrian by the fraction, probably; no quarter drachma is known, but quarter shekels are found here.

263. Assyrian by the tapering form and the rosette pattern. There is a similar weight in the Brit. Mus., with a rosette, weighing now 651·4, or five shekels of 130·4, a high standard agreeing closely with this.

264. From middle of E. side of town. Level 400. Middle of Vth cent. B.C. Shekel, because found with No. 241 of same form, which is three shekels, and also with No. 230, five shekels.

265. Frog weight. Several frog weights are known in bronze and stone, but they do not seem to be all on the same standard; most of them are shekels, however. That they are weights seems likely from their never having been pierced or attached to any object, and from weights in the form of a frog being represented in sculptures. (See "Archæological Journal," xl. 421.)

266. Too fine in shape for an Attic weight, and certainly Assyrian by the multiple.

267. Ovoid of the modified duck type, therefore probably Assyrian; an ovoid Attic (No. 320) is flattened on the top, not like this.

268, 269. Too nearly cubic for Attic weights; and 268 found with Assyrian weights, Nos. 230, 241, 264, and 272. Level 400. Vth cent. B.C.

270, 271. No Attic weights known of this type, which is Assyrian.

272. Assyrian by the tapering form, and found with Nos. 230, 241, 264, and 268. Level 400. Vth cent. B.C.

273. Though this is a lower standard than any other Attic weight here, yet it is so precisely the proportions of the weights Nos. 288 and 323, the latter of which cannot be attributed to the Assyrian shekel, that it seems more likely, in the absence of any similar weight which is clearly Assyrian, that this class is all Attic. The style of this also, the rounding of the edges and bulging of the sides, is more Attic, and alabaster is rather commoner in Attic than in Assyrian weights.

274. This is of the same class as the preceding.

275, 276. Lead, almost unknown in Assyrian weights, and therefore Attic.

277. Attic by the multiple; 12½ shekels is never met with.

278. Attic for the same reason.

279. Of yellowish limestone, with purple-grey patches. A similar weight in form and colour is No. 357; and being probably both of one standard they must be Attic.

280 to 283. All Attic by multiples; 281 from Ptolemaic house on E. side of town, IIIrd cent. B.C.; find 93, with Nos. 13, 65, and 475.

284. Hard white limestone, badly made, like No. 313. From this, and the form, probably Attic.

285 to 287. Attic by multiples.

288. See 273.

289 like 315 in form and colour; therefore Attic.

290 to 292. Attic by multiples. 292. Hard white limestone. A hole in the top is partly filled with lead; this was probably put in to adjust the weight; but it is possible that there was a handle leaded in, which is now lost. We have now reached so far beyond the usual range of the shekels that weights should be attributed to the Attic standard, unless there is strong evidence for the Assyrian.

294. Fine hard white limestone.

296. Fair white limestone, but powdery on surface.

299. Fine hard white limestone.

306. Chiselled down to a flat surface below, and

rough chipped to a fairly smooth curve above. Hard white limestone.

313. Soft white limestone.

316. The only leaden weight of the type so common at Alexandria; nearly all the lead of Naukratis is in thinner pieces, or flat sheets.

332. Looks more as if a mediæval piece.

333. Like 306, but under side a face of dressed building stone (?).

338. Burnt white limestone, powdery. The X on the top may be the Roman numeral X.

352. Hardish grey limestone.

353. Fine hard white limestone, colour and form as 299.

354, 355. Attic, and not kat standard by the multiples.

356. Attic by the connection with No. 279.

357. Attic by the rounded form.

358, 359. Attic by the multiples.

360. Phœnician by resemblance to 383.

361. A very hard black silicate, taking a high polish; like Nos. 401, 435, and 451; all rectangular, two Phœnician, and two Æginetan.

368. Browny-white quartzite; rough in shape, with a hollow in the top.

371. White marble, crumbly.

377. Found in loose stuff over the scarab factory.

379. Found just inside the E. wall of the temenos of the Dioskouroi. Vth cent. B.C. (?).

380. Brownish-grey limestone pebble, ground flat below; like 227, but browner.

386. Looks much like a piece of a granite corn-rubber, trimmed down at the ends, and rounded.

389. From burnt potter's rubbish in N. town. Level 300. VIth cent. B.C.

397. Found with Assyrian weights. (See 268.) Level 400. Vth cent. B.C.

399. Very peculiar form, as if two barrel weights conjoined.

400. Hard polished white limestone (or magnesite ?) flawed.

401. See No. 361.

404. White limestone, like Nos. 203, 204, 253.

409. Hard white limestone.

418. A remarkable example of a bronze case with less than one-sixth filled with lead.

419. Hard browny-white limestone.

422. White saccharine marble.

425. Softish grey limestone.

426. Harder grey-brown limestone; these four disc weights (422, 425 to 427), closely agreeing is remarkable, as the type does not occur again.

434. Black and white syenite, like No. 2, &c.

435. See 361.

444. Very soft white limestone.

451. See 361.

455. Hard greyish-white limestone.

461. This very strange block has been hollowed out with a conical hole in the top; this hole is picked, and not ground, except just at the edge; hence it cannot be the head-piece for a bow-drill. It is possibly intended to hold a metal weight.

464. Hard browny-white limestone.

475. Finely worked, and with a hole in the bottom for adjustment by lead plugging. Found in Ptolemaic house on E. side of town, IIIrd cent. B.C., with Nos. 13, 65, 281, and 489. Find 93.

477. Hard white limestone.

479. The three marks on this weight (see fig. 94) are inlaid with silver, and the weight is of fine work. There is a square bronze weight in Brit. Mus., from Egypt, marked T Θ H, which weighs 176·2. If it were divided by 9 (in accordance with the Θ) there would be a unit of 19·6, which might go 12 times in 241; but such a unit would not agree with any standard, unless it were one-fourth of the 80-grain standard, to which this is already classed.

484. Soft white limestone; roughly shaped.

489. Found with Nos. 13, 65, 281, and 475 in Ptolemaic house of IIIrd cent. B.C. Find 93.

494. The two marked on this refers probably to its being half of the uncia; compare similar marks for fractions on Assyrian lion weights, and the numeration of Triens, Quadrans, Quincunx, and Sextans.

495. This is a type of form very usual in black stone weights. (See Brit. Mus.)

498. This type of weight has never been attributed yet; such weights are placed among the unclassed at Bulak, and are unlabelled in the British Museum. As this type is commonly to be met with in the bazaars of Cairo in use, and not showing any signs of great age, and as none of the weights of this type show such signs of age as Ptolemaic and earlier weights show, it seems clear that they are Cufic and Arabic. As, further, the unit of them is exactly the dirhem, and wukiyeh of 10 dirhems, there cannot remain any doubt on the question.

500, 513. There discs are of a curious type; they agree to the wukiyeh, they do not show any sign of great age, and disc weights are in common use among the Arabs now.

512. This is one of the latest class of glass weights, with the flowing Arab script, instead of the Cufic. These glass weights, and Arab weights in general, were many of them bought of travelling dealers at Nebireh market, and none of them belong to the site of Naukratis.

515. Cannot be connected satisfactorily with any standard. It might be 120 utens of 1450 grains; but such a multiple is unlikely.

516. This may be a weight, but the barrel is not flattened on one side, and it does not agree to the Assyrian unit. It is hard to see what other purpose it can have been for.

96. The results of this catalogue of weights can be seen graphically in the diagram (pl. xxiv.). This, which would otherwise be a long strip, is here divided into two halves, placed one over the other, but without any connection, except at the end of the upper half, and beginning of the lower. The closely ruled portion contains a spot or letter for every weight, whose correction for change does not exceed 2 per cent. Letters are used in parts where two standards meet and become confused, the initials S D or K distinguishing to which standard the weight belongs, according to its form, material, or multiple.

The level of the spot shows what multiple of the unit the weight in question is, according to the scale at the left hand of "multiples." The scale of grains at the base of this portion of the diagram is continued up through this part, and on into the region of the curves, to serve as the scale there. The scale of grammes at the top of the curves is added, to enable any one more familiar with grammes to grasp the results more readily. The conjunction of the two scales will serve also as a rough means of converting grains and grammes by inspection. The scale of grains has extra entries in it, half or double of the regular series; these are to allow of reading the values of the Phœnician shekel and the Attic drachma more directly, as these units have to be halved and doubled respectively, in order to compare them with the others. The curves represent the frequency of occurrence of weights of any particular variety of each standard. The number of examples in each space of one grain is added up, and the curve over that drawn through the corresponding level in the scale of "Number of Examples" marked at the left hand.

Thus at a glance we can see the distribution of the light or heavy variations of each standard. The importance to be assigned to small variations in the curves, of course depends on the number of weights; if there are only 20 or 30 an irregular curve may mean nothing; if there are 200 or 300 every distinct feature has probably some meaning.

97. The general result will be at once to show that it is useless and misleading to take a very exact mean of such a divergent set of materials; that in judging of the connection of two units, we must rather look to see if the curve of one, when multiplied or divided, fairly corresponds to the curve of another, rather than multiply or divide their mean values, and show that they are approximately related. To take a good instance of this; it might seem likely that the 80-grain unit was a form of the Persian silver standard, though the examples of it are widely and distinctly separated from what appears to be the curve of that Persian unit. On multiplying these curves by $1\frac{1}{2}$, to bring them into the Assyrian shekel, from which the Persian silver is derived, we see that the 80-grain curve will extend from 116 to 122, and looking to the Assyrian curve we see that this would only cover a most insignificant part of it, and is far too distinctly removed from the great mass of the examples to have ever been thus derived. Taking the curve of the Persian silver, however, that would extend from 127 to 130 grains, which is just the greater part of the Assyrian curve, agreeing so well with it that we cannot doubt the connection.

The division of the Aeginetan into two groups apparently (beside sporadic examples that are lighter, with which compare the inscribed 9-stater weight in Brit. Mus., yielding a drachma of 90·3, from Benha) is remarkable. The heaviest, according to Mommsen, is 97, whereas here is a group centring on 98; the leaden Aeginetan minæ, however, point to 98 (without any corrections having been applied to them), and thus

certify the higher variety. The lower variety agrees with the usual coin standard. The heaviness of these early Aeginetan weights from Naukratis, which are before the bulk of weights ordinarily known, bears strongly on the possible derivation of the Aeginetan standard from an Egyptian and Oriental unit of 200 grains. (See "Archæological Journal," xl. 420.) Certainly, looking to the curves, it seems quite impossible to believe that the Aeginetan is derived from the Persian silver standard, as has been supposed.

The Phœnician is a singularly disjointed and rambling group; and the bad workmanship in general of the weights is in accordance with this. If this name is rightly applied to the standard, we may see in this variability an appropriate connection with the people who had no centralized national life, and were merely a collection of traders with independent interests and ways. There is a possibility that many of the weights assigned to the Assyrian, Attic, and Egyptian groups are of the Phœnician standard. Instead of being decimal multiples of the former, they might be triple multiples of the latter. 3 Phœnician of 210 would be 630, or equal to 5 shekels of 126; while the range extends to 235, 3 of which would be 705, or equal to 5 kats of 141; thus covering also the whole range of the Attic weights. Here a new statistical test comes to our aid. The possible instances of this kind must be all multiples by 5, 10, or 20 of the other three standards, in order to be triple multiples of the Phœnician. Selecting therefore all such, and placing them together, we find about 12; but of these only one is of a rectilinear form, and that one is connected with similar weights, which are not quinary multiples of the Attic, and which cannot therefore be Phœnician. Hence we have a possibility of 11 weights being Phœnician triple multiples, not one of which is rectilinear; whereas Phœnician weights, on the average, have a large proportion rectilinear (about 1 in 4). Hence it is unlikely that these weights in general are of Phœnician standard, and consequently we have no evidence of any triple multiples of that standard. These weights are therefore all left in the Assyrian, Attic, and Egyptian standards as quinary multiples.

It is striking to see the large number of weights of the Assyrian standard, confirming the many similar weights which I had already published as being found in Egypt ("Archæological Journal," xl. 421).

The curve of the Assyrian standard agrees closely with other sources of this standard. The mean of the lion weights is 126·5; of the ducks 125·6; of the barrel weights 128·1; of the other Egyptian examples 127·5; and of the coined Darics 129·2; these various classes just occupying the highest part of the curve of frequency.

The Attic weights, though not made with much elegance of form, being generally of rounded, bulging curves, are yet more accurate than the other standards, as is seen by the compactness and steepness of the curve.

The Egyptian curve shows the well-known gap between high and low varieties, suggesting a special standard of 139 grains, beside the high type of 142 to 151. The low standard is that shown by the well-known inscribed "5 kat of Heliopolis;" and this seems as if it were a truly local variety, since an uten weight from Heliopolis gives 138·8 (in Mr. Chester's possession). What is greatly needed now is to obtain a large number of dated weights from each place, and so disentangle the varieties belonging to each district in successive ages.

98. One clue to the variations may be found in some cases by examining the forms or materials of each standard. For instance, taking the kat weights, there are a sufficient number of particular types to compare their distribution. This is best done by curves, as in comparison of the relationship of standards; but here we may treat it in the briefer way of taking the means of the examples of each class of form:—

Rounded.	Sub-domed.	Domed.	Dome.
mean 143·6	140·7	144·2	145·0 [1]

Here we see that the sub-domed type is the specially low variety of the standard, and that the fullest dome form is the heaviest. In the Assyrian shekels there is no difference of weight in the types worth notice, except that the barrel weights are all either high or low; 3 being under 124·5, and 3 over 130·4. The tendency to a straggling set of low varieties, so peculiarly seen in the Assyrian, may be well due to a wish for inter-relation with the Egyptian kat; especially as the kat was naturally multiplied by 5 and the shekel by 6. Thus if they took a sixth of 5 kats of 151 to 138 grains, they would reach a shekel of 126 to 115 grains, which is very closely the range of the low varieties of the shekel outside of the main curve. In the Attic weights the forms seem unconnected with varieties of weight.

The Phœnician shekel, which afterwards became the Alexandrian standard, shows well-marked varieties. The mean of the different types being—

Irregular.	Sub-domed.	Domed.	Dome.	Square, &c.
225·4	230·	219·0	228·5	231·

Now, since this standard degraded to the Alexandrian form, it may be surmised that the square and sub-domed types are earlier than the closer copies of the Egyptian domed form.

The varieties of material may be similarly examined. Taking the kat weights, the mean values of the examples are—

Basalt.	Syenite.	Alabaster.	Bronze.
144·9	144·2	141·1	143·5

showing that the alabaster belongs usually to lighter weights, and the basalt to the heaviest.

In the Phœnician standard the mean values are—

Basalt.	Alabaster.	Limestone.	Bronze.
217·6	227·5	232	223

Thus the basalt is generally the lighter, and the limestone the heavier standard.

Another interesting inquiry is with reference to the average multiple of each standard; or, in fuller terms, the average bigness of the weights, irrespective of all variations in the value of the standard. If a standard is generally used for valuable objects, the weights will, on an average, be little weights; or if for common and cheap things, the weights will be ponderous. If a collection of modern English weights were made, the Troy and Apothecaries' weights would be mostly little ones, of grains and drams and ounces; whereas the avoirdupois weights would be mostly ounces, pounds, and stones. Finding therefore what example of each weight has an equal number smaller and larger than itself, the values are in grains—

Egyptian.	Assyrian.	Attic.	Phœnician.	Aeginetan.	80-grain.
730	500	650	220	390	2000

And hence we conclude that the Phœnician weight was most commonly used for precious metals and such valuables; that the Aeginetan may have been the same; but that the Egyptian, Assyrian, and Attic would be used for more ordinary trade in the common metals, and perhaps domestic purposes—particularly the Egyptian; while the 80-grain standard was not a coin standard, but rather used for domestic and common purposes.

99. Having now briefly pointed out some of the results which may be deduced from the collection of Naukratis weights, we will consider the origin of the 80-grain standard, the only one that is found here which is not already well known. As I have observed, the gap between this and the Persian silver curve, and the want of relationship between this and the two-thirds of the Assyrian shekel, is good evidence that this is not merely a low variation of the Persian silver standard. Another evidence is in the large size of its examples, averaging 2000 grains, and therefore not so likely

[1] It should be explained that these are not numerical means, since such are often misleading, one extreme example outweighing a number of concordant ones. The safer plan in most subjects is to take the *central example*, i.e. that weight which shall have an equal number of instances higher and lower. This is particularly the case in a consideration further on, of the average multiplying of each standard; and such a method is in the strictest accordance with the mathematical theory of frequency of error.

to be connected with a coin standard. For we must remember the gold standard of Assyria, the 128-grain shekel, is also the commercial and general weight, and that the silver standard of two-thirds of this is merely a unit formed for monetary convenience. The multiples of this 80-grain standard give us the clue to its origin; they are characteristically binary, or binary-decimal, 2, 4, 20, 40, 80. And these weights of 40 and 80 would have all been classed as Assyrian shekel multiples of 25 and 50 shekels, if such decimal multiples of the shekel were admissible. That they are not such is shown by the instances 10, 25, 50, and 100, of this 80-grain standard, which cannot be $6\frac{1}{4}$, $156\frac{1}{4}$, $312\frac{1}{2}$, and 325 shekels, and yet which are too concordant with the 40 and 80 multiples to be separated from them. The only likely conclusion, then, seems to be that this standard is the Assyrian 5 or 10 shekel weight binarily divided, and used as an independent unit; and since it is not known elsewhere, this would seem to have been a modification peculiar to Naukratis, which is also shown by the large size of the weights, indicating that they belonged to domestic dealings, and not to trade in articles of value. Another sign that this standard belongs to Naukratis, and had not come in from a wider field of use, is in the compactness of its curve; no large range of time and distribution had given opportunities for permanent diversities of standard to arise. The best test of this theory of its derivation must be by comparing its curve with the Assyrian: the range of $77\frac{1}{2}$ to $81\frac{1}{2}$ grains corresponds to a shekel range of 124·0 to 130·4, which coincides closely to the Assyrian range; and perhaps we may even see a closer relationship in the peculiar decrease in the number of examples in each curve, just where the number should be greatest; this dip occurs at $79\frac{1}{2}$ in the one curve, corresponding to 127·2 in the other, or within $\frac{3}{10}$ grain of the existing dip. The coincidence of the curves is unequivocal in its testimony to the origin of this 80-grain unit, by binary division of 10 Assyrian shekels.

100. There now remains one class of weights, the Attic tetradrachm coins. These are so well known, and so often weighed, that a few examples would not be worth notice; but the large find at Naukratis, all of one style, and the method used to find the original weight of each coin, have supplied us with some accurate results. The coins were all cleaned by the process already described, and only a few are omitted in the following list, which were found to have some lime still in them after weighing. The following list therefore gives the original weight, when buried, of a uniform set of tetradrachms in fine condition:—

232·7	263·5	263·9	264·2	264·7	265·0
262·3	·5	·9	·3	·7	·0
·4	·6	·9	·3	·8	·2
·6	·6	264·0	·3	·8	·2
·7	·7	·0	·4	·9	·2
·7	·7	·0	·4	·9	·3
·9	·8	·0	·6	·9	·4
263·2	·8	·1	·6	·9	·6
·4	·8	·1	·6	·9	·8
·4	·9	·2	·7		

The following were a small find of later date:—

264·8 265·5 265·7 265·9

And some earlier ones are 258·9, 261·3, 261·9, 262·1; but these, except 261·3, are slightly worn. With these was found one of the later type of the preceding lot, which—like them—was heavier, being 265.3; and in the preceding lot was one early one, which was lighter, like the other early ones, being less than 263·7. The very light one at the beginning of the large find is evidently fraudulent; it has no signs of having lost anything appreciable by wear.

The general results then are, as compared with their published weighings,—

Earliest, with Gorgon's head (Mommsen)	261· = 4 ×	65·2
Naukratian, earliest, stiff and wooden style	261·	65·2
„ stiff, but expressive . .	264·2	66·0
„ fine head, but archaistic owl	265·5	66·4
Usual bulk of the coinage (Mommsen) .	266·6	66·6

On comparing these results with the curve of the Attic standard, it will be seen that they cover the lower half of the curve, but do not reach the

higher half of the examples of weights; and as the coin weights were continuously rising as time went on, we cannot suppose that the coins were made as light as possible to save silver. Rather we should conclude that the primitive Attic standard was too light to agree with the same standard elsewhere, and hence the bulk of the weights are of a higher value, and the coins were continually raised as their circulation increased, to bring them into better conformity with the more general value of the standard. This greater value of the weights in general, and the approach of the coins to the higher value, seems distinctly to show that the Attic is not derived from the Assyrian standard. The difference of position in the curves is distinct, and more than could be expected by a chance difference. While the increasing approximation of the coins to the weights, in face of the resemblance to the Assyrian standard always pulling the other way, strongly shows that the Attic was an entirely separate standard, sufficiently distinct for the Greeks never to confuse or amalgamate the two.

101. A new and interesting result of ascertaining the original weights of a large set of coins, all of one city and one period, is the determination of the errors of the mint. The *average* variation of the weight from the mean is but ·6 grain on 264 grains, or 1 in 410, equal to ·16 on the drachma. This compares well with even our modern machine-made coinage; the English legal *remedy of the mint*, or extreme variation allowed, being 1 in 583 for gold, and 1 in 240 for silver. Thus four-fifths of the coinage of Athens, in the fifth century B.C., would have passed as legally true by the regulations of the coinage of England in the nineteenth century A.D. It is much to be wished that in all large finds of coins of one period, a series of accurate weighings, with due precautions, should be made. The only other find that I have examined for this purpose is that of 13 small, rude Gaulish silver from Chalôns-sur-Saone; they average 29·85 grains, and their mean variation is but ·33 grains, or 1 in 90. Such a test as accuracy of mintage would give us an excellent comparative, and, to some extent, an absolute, test of the capability of different races and of different ages in mechanical arts;—a test everywhere alike in its importance, its nature, and the readiness with which we can apply it.

CHAPTER X.

LEVELS AND MEASUREMENTS.

102. For levelling in the excavations of the town, the usual way was to transfer the level of the point to be fixed, or some level just above it, to the nearest steep side of the excavated hollow, by means of a vertically suspended mirror; then to measure up the almost vertical side of the cutting, using the mirror, if needful, to transfer the line a few feet laterally, and, finally, sight to the horizon over a large mass of Roman brickwork, which I adopted as a datum point, high up above most of the mound. Remembering the dip of the horizon, and that this brickwork is 17 feet above the plain, the top of it was sighted to near the top of the trees that skirt the horizon, at a distance of two or three miles. This method gives results within a few inches on short distances such as I needed in the town; but for the more distant points of the Great Temenos and buildings in it a theodolite was used. The advantage of an approximate but ready way of levelling, as above, is that the level of anything found can be at once fixed in a minute or two without any delays, and quite as accurately as is necessary. The top of the brickwork was called zero, and the levels read and entered as *minus* quantities in the work, and in marking pottery; but for publication, all levels are read as *plus* quantities above an arbitrary point, the previous zero being 600 in the new scale; this simplifies all the statements, and every level published is on this basis.

103. The principal points of the levelling are—

800 inches.	COUNTRY AND WELLS.	NORTH PART OF TOWN.	SOUTH PART OF TOWN.	GREAT TEMENOS AND CHAMBERS.
700			Highest part of houses . 746	Highest point of chamber . 702
600		Highest part of houses . . 692	Top of mound of slag . 618 Red brick floor . . 600	
500	Engine-house roof . . 535	Surface of mound on E. side, by the modern road . . 540 to 500		Destroyed building, top . 594 Floor of filling up, N. . . 540 Floor of filling, Upper ledge, } chambers, S. 536 Lower ledge in chambers, N. 503
400	Canal, full . . . 410 Fields E. of canal . . 400	Highest burnt earth . . 445 Top of main burnt earth (potter's waste) } 405	Top of white lines . . 480 Main white lines of road mending with stone-dust, in S.E. of town. } 455 to 385 White lines, mid-town . 400	Dusty plain, W. end . . 450 Ground W. of chambers . 445 Highest addition wall base . 426 Ground level, Ptolemy II. . 409 Cultivated plain { S. . . 405 N. . . 400
300	Fields W. of canal . . 385	Floor house 93, 5th cent. . 380 Tetradrachm find, 5th cent. . 370 Main burnt earth . 360—350 Chip layer, Apollo 2nd t. 312—327 Big iron chisel . . . 320 Apollo temenos wall base . 303 Pottery from N.E. of town 285—310	to 360 Lowest white line . . 340 Scarab factory . . 336 Oldest burnt level, on S. 334 " " at Scarabs 312 Ulysses cylix, about . 325 Oldest burnt, generally . 320	S. W. addition wall . . 390 Chips on S. side . . 385 to 365 Main addition walls . . to 340 Ptolemaic gateway base . 355 Temenos wall base . . 354—324 Sand bed, Ptolemaic, base . 334 Base of chambers . . 311 to 304
200	Trough by well 2 . . 270 Top of well 4 . . . 257 Water over well 1 . . 245 Top of well 1 . . . 242 Water over well 3 . . 244 Top of well 3 . . . 237 Top of well 2 . . . 208	Burnt earth by kilns . 280—300 Old ground by Apollo . . 277 Kilns down to . . 254 Deepest cleared by Arabs . 250 Lowest burnt line . . . 230 Bottom Apollo trench . . 220 Pottery in deep digging . 216	to 300 Lowest pottery, E. town 292 Water in S. and S.W. . 280 Lowest digging on E. . 217	Water on E. side . , { 298 to 280 Water on W. side . . . to 270 Deepest clearing . . . 270
100	Well 4, base . . . 145 Well 1, base . . . 110	Burnt ash and bone . . 170 Bottom of deepest digging . 160		
0	Well 2, base . . . 99 Well 3, base . . . 41			

entered in the accompanying table, the levels being all stated in British inches above an arbitrary datum. The great beds of potters' rubbish, consisting of burnt earth, on the N.E. of the town, seem to have been thrown there in consequence of that not being a populated part, as in those beds below the top of them was found a Theban coin of 300 B.C. at 370, which corresponds to the level of tetradrachms of 460 B.C. in another part of the E. side.

104. It should be noted that the tops of the well mentioned in the first column are not the original tops, but the highest part still existing. In the second column the chip layer on which the second temple of Apollo stands should not be compared with the town levels, as it is really the height of the old mound on which the first temple stood. The old ground in the Apollo temenos is a valuable datum, as it was a clear space kept dry and free from mud-rubbish, on which wind-blown dust accumulated; hence (barring any excavation before the inclosure) it represents the original ground-level when the first dedication of a temenos or temple to Apollo took place. At the ordinary rate of accumulation we should date the lowest traces of human occupation here, the burnt ash and bone, to 800 B.C.; but it is perhaps older still, as, probably, the accumulation is mainly Nile deposit which would throw its age back even a couple of thousand years. But it is not a sign of a town or site of importance, but only of poor habitations here, which may have existed from the old dynasties. The levels of the first burnt stratum vary rather, showing that there was an artificial difference of about two feet before the burning of the town took place; thus it is highest at the southern end, nearest the Great Temenos, and lower to the north. In the last column, the Great Temenos, the height of the building was only that which I found on going there; it had probably been 200 or 300 ins. higher, and now it has been cut away lower. The destroyed building is that which the Arabs have cut away between the building of chambers and the gateway. The ground level of Ptolemy II. is that of the entrance to the building in the gateway, which probably shows about the level of his time. The addition walls are those built around the chambered building at later times. The base of the Ptolemaic gateway shows how deep they dug for foundations for that building; apparently about 4½ feet. The level of the base of the temenos wall varies, showing that it has been built on partly artificial ground; much higher base levels may be read in some of the excavations, but remembering the additional walls at a higher level around the great chambers, we may rather suppose these to be later patchings and mendings, like the others. The Ptolemaic sand-bed is the layer placed beneath the foundation stones of that building in the gateway, and shows the deepest point disturbed by the Ptolemaic founders. The base of the chambers in the great mound would probably indicate the ground-level of that period of their foundation, or a little below it.

105. The sizes of the bricks have been mentioned already, as indicating the age of buildings by their steady diminution since the XXVIth dynasty. A list of many examples will be found in the *Archæological Journal*, xl. 108. Those measured this year are as follow:—

Sais, wall and citadel, 650 B.C. (?) .	17·3	8·1	4·9
Kom Afrin wall, 600 B.C. (?) . .	16·3	7·4	4·4
Naukratis chambers in temenos . .	16·3	8·3	4·3
Saft et Hennah, wall, 350 B.C. . .	14·9	7·8	5·0
Naukratis, gateway of temenos, 280 B.C.	14·8	7·2	5·2
House about 350 B.C. (?) . . .	14·2	7·0	4·8
Houses N.W. of temenos, 300 B.C. (?) .	14·6	7·1	5·0
" " " .	14·1	7·0	5·0
Apollo temenos, 440 B.C. (?) . . .	14·0	7·8	4·1
House, 200 B.C. (?)	14·0	7·1	4·6
House, outside, N.W. of temenos, 100 B.C. (?)	14·0	7·0	5·0
Bricks in N.E. of town, 100 B.C. (?) .	14·3	7·1	5·0
House, E. of town, 200 B.C. (?) . .	14·1	7·0	4·5
Kom Afrin, sandy bricks, later than great wall	14	7	
Kom Afrin, still later, whitish bricks .	13	6½	
Naukratis house, 200 B.C. (?) . .	13·6	6·9	5·1
" house, burnt, 150 A.D. (?) .	11·8	5·7	4·0
" red baked bricks, Roman .	8·6	4·0	2·3
to	7·2	6·9	
and	8·2	8·2	1·9

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CHAPTER IX.

ON THE *GEOGRAPHIA* OF PTOLEMY.

106. This mine of geographical knowledge has, perhaps, of late years not been worked so heartily as it might, owing to the lack of any general way of treatment and the greater amount than need be of "personal variation" in the results. The object of this sketch is to outline the geography of the Delta according to Ptolemy alone, not modified by any other sources of information. If this yields an intelligible result, it is then time to bring in other materials of a less rigid and satisfactory nature.

There are two ways of treating the latitudes and longitudes of the *Geographia*. If they are but little distorted, and our object is only to seek to place a town, the site of which is unknown, amongst other towns which are known, the happiest way is to draw the Ptolemaic degrees on a correct map, according to the known places; then all the errors are shown as distortions of what should be a uniform network of lines, and we can safely mark in the position of any town not yet identified. But the more thorough and generally applicable principle is to fray up the materials into their first forms, to reduce the work of Ptolemy to its original elements, and get back, so far as we can, the lists and statements from which he worked; and to lay down, so far as we may see them, the lines on which he put together his information into a general whole. This we propose to do here for the Delta.

107. In pl. xxxix. we have the Delta according to Ptolemy strictly, showing every position which he fixes within those limits. The first principle of his construction that we see is that he assumes (for lack of detailed information) that the rivers ran in straight lines between certain fixed points. This is shown by the positions along the Agathodaimon, or Great River; Letouspolis, Andronpolis, Naukratis, and Hermoupolis are all said to lie on the W. of the river, while Nikiou is on the E.; and the Kanobic mouth and the two branchings of the river—all three points on the river—lie in a straight line. Next the branching and mouth, and four cities on the Pharmuthiac river, and Letouspolis, are all equally in a straight line. Next, Taoua (Taba of Antoninus), Xois,[1] and Pakhneumounis lie on a straight line. Next, Athribis is less than 5′ (Ptolemy's smallest unit) from a straight line from the branching to the mouth of its river. And, lastly, the distribution of the cities in the third Delta and small Delta show that no great bending of the streams between their branchings and their mouths can have been reckoned on. The first case, that of the Great River, is the best, as there are so many points on it, and it lies diagonally on the map, and hence the straight line is not apparent in the figures, but only when drawn.

108. Next we may subtract those sources of information which we may be assured that Ptolemy of Alexandreia possessed. First, the great road across the Delta was one of the sources, without doubt; and this is confirmed by the fact that the sites, so far as we know them, are in relatively correct positions: Pelousion, Tanis, Thmouis, Hermoupolis, and Alexandreia. Onouphis doubtless was on the same road, as it is put by Ptolemy exactly on the line between Thmouis and Taoua; though the Antonine itinerary does not name it, but gives Cyno in the same interval instead. Naukratis was also on this road, for the same reason, as lying between Andronpolis and Hermoupolis; and as in the Antonine list, Nithine is placed exactly where Ptolemy places Naukratis on this road, it is scarcely to be questioned that Nithine is a corruption of Naukratis in the MS. of the itineraries.

Next we may subtract the road from Nikiou to Boutos, since it is certain that these cities, with Sais and Kabasa, would be threaded together by a road running along the river.

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[1] *Sakha*, as Champollion supposed; I have seen an inscription of the second century naming Xois standing in the street of the village, close to the great mounds.

Next Taoua, Xois, and Pakhneumounis, being in a straight line, were probably taken on one road.

Next Hermoupolis, the Mastitai, Bakkhis, and Moiris (lake) are apparently on one road; as also are Alexandreia, Mareia (lake), and Phamouthis, thus Phamouthis lay on the opposite side of Lake Mareotis to Alexandreia.

109. Having now struck out all these data as being connected, and therefore to be treated in separate groups, and not to be compared and conjoined from one group to another, we have but a small residuum of towns, which contain all the most erratic and irreconcilable points, and which therefore show that they in some way stand on a different footing to the other lines which we have separated already. The most striking group in the line is Memphis, Babylon, Heliou, Boubastos, and Phakoussa, all of which, except the last, are indubitably known. They form a line only just sufficiently curved to avoid touching the river; the places really lie on a natural line of road, and their relative distances are not far out. But the absolute quantities are about double of the true distances; thus the whole would be 85, instead of 47 geographical miles, as it really is; if we then reduce the spaces in this proportion, we find 14, 9, and 24, as against the actual distances of 10, 9, and 28 geographical miles. The explanation seems therefore to be, that for all these places Ptolemy had a line of road, along which the distances were reported in *schoeni*, which he mistook for days' journeys. This would give about this proportion of undue lengthening, the *schoenus* being about 6½ miles, and therefore the day's journey about eleven or twelve miles, by the misproportion found here. We can also see the separate *schoeni* lengths showing themselves in the proportion between the stages, which are in the ratio of 3, 2, 5 exactly; and the spaces being closely this number of *schoeni* in length, allowing for winding of the roads. The *schoenus* was probably a length of 10,000 double Egyptian cubits, or exactly 6½ miles, as this would be 57 stadia, a sufficiently close result to the approximation of 60 stadia assigned by Herodotos.

We now have to apply this system of reduction on this line of road to the position of Phakoussa. For the position assigned by Ptolemy will not agree with Fakus, or any other supposed site, if taken as it stands, and in connection with other known places, as Tanis or Thmuis. The distance beyond Boubastos, however, reduced, like the rest of this line of road, would give a distance of one *schoenus* further, within 3′ of position (Ptolemy's smallest unit of place being 5′), and this would place it, therefore, 6½ miles beyond Boubastos; or perhaps seven miles, if the distances are merely taken as proportionately in error throughout the line, and disregarding the probability of their having been stated in round *schoeni* originally. Now the town of Saft el Henneh, identified by M. Naville with Phakoussa, on monumental grounds, is six miles from Tell Basta, or exactly in accordance with the only rational explanation of the Ptolemaic positions of this line of places.

110. Sebennutos is another very erratic position, for which, however, no reasonable account can be given. It appears to have been displaced along with Bousiris, since no town of Abusir is known on the river where Bousiris appears, but there is an Abusir close to Semennud. Sebennutos ought to appear on the Athribic arm, about midway between Athribis and the coast. It is most likely that Ptolemy would have a reckoning along the river from Athribis to Sebennutos, and the distance from Athribis is fairly in agreement. But why the position should be put S.W. instead of N. of Athribis is inexplicable; we can only guess that there may have been a road to Tanis from Sebennutos, and Ptolemy may therefore have been led to place it in a straight line between Memphis and Tanis.

Pharbaethos is evidently fixed on the river at about the right distance from Memphis and from Tanis.

Leontonpolis may have been on the Sebennutos-Tanis road.

Panephusis appears to have been fixed at one *schoenus* up the Mendesian mouth.

Metelis appears to be placed simply in the middle of its nome, which is limited by the position of its mouths and the branch at Hermoupolis.

The Mareotic region we know too little about to venture on any identifications; perhaps no district so rich in ancient sites, and so near a great Europeanized city, is so little known.

The duplication of Heliou and Heliopolis is difficult to account for, especially as Heliopolis will fall into the desert region. That Heliou is the place we now call Heliopolis we cannot doubt, as it is called *vel* Oniou, and On is a recognized name of Heliopolis. Mr. Griffith suggests that Heliopolis was known to be on the road to Boubastos, and therefore appears there; but that it was also known to be on the right of the Trajanus Amnis, between Babylon and Heroonpolis, and was accordingly entered there again as a second city.

111. Heroonpolis, known to be Tell el Maskhuta by M. Naville's discovery of the milestone there, is not quite at the open head of the Arabian gulf, the distance and direction between the spots agreeing to the gulf ending at the end of the old Bitter Lakes, near the Serapeum, though its innermost end reached to Heroonpolis. Arsinoe, on the Arabian gulf, is evidently miscopied as in longitude 61°4′, by confusion with the other Arsinoe, the capital of the Faium; though it is classed by Ptolemy between the head of the gulf and Klusma. It is possible that only the longitude has been corrupted from 63°4′ to 61°4′, but it seems more likely that it has been wholly altered to agree with the other Arsinoe.

Klusma is not far from the place assigned by the Antonine itinerary; there it is 68 Roman miles from Hero, here it is 70 geographical miles. But both of these statements are distinct from that of the milestone of Hero, which gives 9 miles to Klusma (see M. Naville's *Pithom*, pl. xl.). A third evidence, however, for the southerly site of Klusma is, that it is placed below the head of the Arabian gulf in the Peutingerian table; and the distance there to Phara—120 Roman miles—agrees well to the distance from Kolzum (or Suez) to the Wady Feiran. On all these evidences we must conclude that Klusma was at Kolzum, in the mound in which I have seen Roman pottery and glass, even though a fort on the top prevents a close examination. The milestone, then, must refer to another Klusma, and what name would be more likely to occur near Heroopolis than that of "shore," or edge of the waves. The milestone, in fact, just shows us that at nine miles from Heroopolis, that is, at the opening of the canal into Lake Timsah, on the shore of the lake, the station which we should expect to hear of at the end of the narrow canal was called Klusma, owing to its site on the shore; the other and better-known Klusma being where the lakes and canal ended on the shore of the open sea at Suez.

Since writing the above view, I am glad to add weight to it, by stating that it had independently occurred to Mr. Poole.

We will now turn to some cities, the sites of which have not been hitherto assigned, with any local knowledge of the antiquities.

112. Firstly, Naukratis. On this site our two most definite authorities are in agreement, Ptolemy and the Peutingerian map. Ptolemy places it on the west of the Great River, which suffered the division of a branch to Sais, at about the modern Selamun; and from that point a canal still runs nearly straight through Damanhur, and on toward the Kanobic mouth, being now lost in Lake Edku. This line of canal agrees, as no other can agree, with the requirements of the Agathodaimon river of Ptolemy; and hence it is entered in the modern map in pl. xxxix. as the representative of that line. As Ptolemy does not place Naukratis close to it, but two or three miles

to the west, and as Strabo states that Naukratis was on the E. of a channel (which he confounds, however, with the Kanobic branch), it was probably not close to the Agathodaimon, but far enough from it to lie on an adjacent canal. Ptolemy therefore fairly places it at two geographical miles W. of the Agathodaimon river, and a little less than half-way from the branching of the river to Hermoupolis, the nearest known points on that line of road. Now, the site of Naukratis, now discovered, is at three miles, instead of two, from the canal, and at just half-way between the branching at Selamun and Damanhur. The result is as close as Ptolemy's information goes. The general question of position has been discussed in Chapter I., where the other authorities are dealt with at length.

113. Having fixed the branching of the river with some probability at the modern Selamun, since it could not well be nearer to Sais, according to Ptolemy, nor nearer Memphis, as then it would pass on the wrong side of Naukratis, we might well look for Nikiou at the mounds of Ed-Dahariyeh. That it cannot be up at Menuf, or Nadir, as has been supposed, is shown by its lying on the road from Thmouis to Hermoupolis, which might bend up to Dahariyeh for the sake of the river lines, but not to Menuf. Andronpolis agrees closely to the site Ramsês; but there are scarcely any remains there, and Tell Hisn might seem more likely. Skiathis appears to be reckoned on the line from Hermoupolis to Moiris, which nevertheless did not go through the Nitriotai (Wady Natrun), nor through Naukratis; to run thus, the road would pass Kom Afrin, and as that is about the last place before it would enter the desert, and as there are remains of a Roman town adjoining the earlier city, we may not be far wrong in supposing this to be Skiathis. For Metelis we might obtain a clue in one of the Koms on the east of Lake Edku, Kom Malasha, or Kom el Maraksa. Below Sais we should look for Boutos especially. It should be sought on the Saitic arm; and if the Peutinger numbers can be trusted, at sixteen miles from Hermoupolis, which just agrees with the line of the Tura Umm Yusef, which appears to represent the Saitic branch. It appears to be reckoned as far N. of Sais as the branching is south, and nearly half-way from Sais to the sea. These indications place it each two or three miles on opposite sides of the site Tell el Ferâin. Kabasa should then be sought about one-third of the way to Sais.

For Taoua, or Taba of the itinerary, we should look S. of Xois, on the Xoite channel, and in a line between Thmouis and Nikiou; and for Onouphis on the same line. As the bearings of this line of road are correct, so far as we know it, Taba should be sought near Berma, and Onouphis near Mit Nezu. Pakhneumounis should lie on the Xoite channel, perhaps at Kum Khanzri, or more likely nearer the coast in the unknown marsh regions. Panephusis is similarly in the marshes of Menzaleh.

Leontonpolis is not fixed to any known line of road; but whether we suppose that it was reckoned between Onouphis and Pharbaethus, or between Thmouis and the branching of the Busiritic mouth, it will fall near Tell el Kadi, or a few miles to the N.E. of that.

Such is an outline of what may be sought for, in order to settle the Ptolemæan geography more certainly. So far as we can go, it is seen, when interpreted according to its original formation, to be remarkably correct in most cases. "More light" in this, as in all other questions, is what we must strive to obtain.

[Since the above was in type I have visited some of the sites indicated by Ptolemy. I may briefly say that Tell Ferain is a site fully as important as we should expect to find for Buto, and that no other mound is possible for Buto within the district. That Kabasa is well represented by Senhur, in exactly the right position. That Onouphis is fairly identifiable with a large Græco-Roman town just S. of Abusir, and that no other mounds exist for three or four miles near

it. That Tell Kadi is not an ancient site, and therefore cannot represent Leontonpolis, which may perhaps be found at a large enclosure N.E. of this, called Tell Hekleh. And that no other mound except Ed Dahariyeh exists around that district to represent Nikiou.]

CHAPTER XII.

KOM AFRIN.

114. FROM the mounds of Naukratis may be seen, six or seven miles away to the W.S.W., a long ridge of a mound against the horizon, with a cut at the S. end of it, leaving a projection like the tooth of a saw. This mound is variously called Tell Afrin, or Kom Afrin. It is marked, but not named, on the War Office map, between the wells of Sheikh Osman and Sidi Khayrallah. It is within sight of the Libyan desert, on the western boundary of the Delta. The whole site is about a mile long, by half a mile wide; and the most important part of it, the main town, occupies the southern half of this area. It has been fortified with a great wall of unbaked bricks, which has, like a great part of the town, been dug away by the Arabs for earth. The gap seen from a distance, is the space which was occupied by the great wall on the southern side, and the projection, like a saw tooth, is the bank of sand and dust which was heaped against the wall, and is now left with its upright face bare. The centre of the town was occupied by a citadel, which stood on an artificial mound of sand; the retaining walls have all been cut away, and the sand now forms a shapeless mass amid the ruins, strewn on the top with chips of limestone. The greatest depth of the excavations is about forty feet below the top, and the greater part of an area about a third of a mile each way has been removed. Towards the south-east side there stood a large temple, with a long avenue leading to it. This has all been dug over by the Arabs, to extract the fine limestone pavement of the temple and avenue; and some years ago sphinxes were found at the beginning of the avenue, and carried away on carts by a pasha. On the north-east side are two inclosures, walled in beyond the great walls of the town.

I was told that very few bronzes are found here; but many statuettes of pottery and of limestone, and fine scarabs. These indicated a town of the twenty-sixth dynasty; and while at Naukratis I obtained antiquities found at Kom Afrin which confirmed this supposition.

115. First a limestone kneeling figure, with inscriptions on the front and back, and on the base. This I bought in Cairo; but afterwards heard from an Arab, who knew it, that it came from Kom Afrin. The inscriptions are given on pl. xxxvi. 1 A. B. C. They show that the man represented was a "Prince of Sais," called Psamtik-sneb, and mention his being connected with the rebuilding of the temple of Neit, which had been overthrown. This title of "Prince of Sais," *Ha-em-Sa*, is of interest; it occurs also on a kneeling figure of dark basalt which I saw in Egypt this year; and the connection is evident between this and the title of the High Priest of Sais, "the Prince of Princes," *Ha-Hau*, which we find on the fine scarab, No. 188, on pl. xxxviii. We see that in the twenty-sixth dynasty there was a great aristocracy in the capital, Sais, probably hereditary; and that the chief of this aristocracy was the high priest. We may well believe that this was the relic of an oligarchy which ruled there during the troubles preceding the twenty-sixth dynasty; a body so powerful that they could not be removed, but had to be left to natural decay, like the Roman senate.

Another object from Kom Afrin is the tablet to Sekhet (pl. xxxvi. 2), and the interest of this is from its naming her the "Lady of Amu." Now, Amu was the capital of the Lybian nome, and anything throwing light on its position is of value. Whether Amu was at this great city of Kom Afrin, or at the lesser site of Tell Hisn, seven

miles south of Naukratis, is still unsettled. At the latter place I saw a statue of Ramessu II., with the inscription on the back, naming him as "beloved of Sekhet, lady of Amu;" and on the left side, "beloved of Sekhet-Hathor, lady of Amu." Hence Amu probably was at either one or other of these cities.

A third important object from Kom Afrin is the figure-head of a sacred bark of Ra. It is executed in solid and massive bronze (see pl. xii.), and thickly inlaid with deep ribs of gold, the depth of each line of inlaying being about equal to its breadth. The face of the hawk and the disc above it are plain bronze; but the uræus on the head, the whole of the wig, and the collar around the shoulders are inlaid. The collar has the pattern of lotus flower and bud—bell and pomegranate—so well known in Egyptian work; and on the breast is the cartouche of Aahmes, with the title "lord of both lands," *neb-taui Ra-nem-ab*. Below the head there is a projecting curved bar of bronze running backwards and downwards to fasten it to a support; and from its position it could not be for fixing it to a statue. The whole appearance of the form, and the position of the bar below, both agree to its having been the figure-head of a shrine of Ra carried in processions; such a bark would be about two to three feet long, and therefore quite large enough for such a purpose. This is a unique piece of work, and is probably only equalled for its richness of inlaying by the jewellery found with the mummy of Queen Aah-hotep, which now ornaments the Bulak Museum.

So many good things coming from this site in one season seems to show that work there would well repay the labourer; though it would not seem a promising ground for any special historical results. These three objects, which I was happy enough to get, I have presented to the British Museum, so that they will always be accessible.

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CONTENTS OF CERTAIN PLATES.

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1. Alabaster figure holding goat (?) by legs.
2. Upper part of figure of warrior. Alabaster.
3. Alabaster figure.
4. Limestone figure.
5. Limestone head.
6. Limestone figure holding lotus.
7. *Faience* head of lion.
8. Terra-cotta head, from vase.
9. Limestone figure.
10. ?

II.

1. Limestone figure, temple of Apollo.

2, 3. Terra-cotta heads, temple of Apollo.

4. Part of limestone figure, temple of Apollo.

5. Limestone head, earliest level, temple of Apollo.

6–11. *Faience* statuettes, temple of Apollo.

12–18. *Faience* statuettes, found in town.

19. Part of limestone figure of bread-kneader.

20. Limestone figure with table of offerings.

21. Limestone figure leading bull to sacrifice, vases by his side. 19–21 from temple of Apollo.

IV.

1. Upper part of vase of light brown pottery, dedicated to Apollo by Paramenon (inscrip. 5).

2. Rough drab bowl dedicated to Apollo (inscrip. 68–79.)

3. Vase dedicated to Apollo by Polemarchos (inscrip. 1).

4–8. Pieces of bowls with impressed patterns; fine dense ware.

VI.

1. Piece of vase (inscrip. 219).

2. Piece of vase found at bottom of well 100 (inscrip. 223).

3. Piece of large thick bowl, showing characteristic Naukratite ornament by the handle; painted inside with lotus in red and white.

4. Piece of scarlet and buff ware.

5. Piece of bowl like 3, dedicated to Aphrodite (inscrip. 700).

6. Pieces of bowl, dedicated to Dioskouroi (inscrip. 665).

X.

1. Thin white-faced bowl, form of the characteristic Naukratite pottery.

2. Black and buff bowl.

3. As 1.

4–6. Black and buff bowls.

7. Thick light-brown, hard.

8, 9. Soft buff and scarlet dish.

10. Brown and buff with Melian inscrips.

11. Drab-brown "eye bowls."

12. Drab-brown and red bowls.

XI.

1. Sword.

2–4. Arrow heads.

5. Adze or hoe.

6. Poker (as found in Etruria).

7. Knife.

8, 9. Fish-hooks (Ptolemaic).

10. Borer?

11. Sickle.

12. Small point chisel.

13. Tang chisel, for wood.

14. Socket chisel, for wood.

15. Borer, socketed.

16. Bell?

17. Double-edged small pick.

18. Scraper?

19–21. Chisels for stone or metal.

22. Gouge.

23. Borer.

24. Socketted celt.
25. Axe.
26. Bodkin.
27. Lance-head.

XVIII.

1. Portion of model of a building.
2. Modelled face, found in the building in the Great Temenos.
3. Model shrine in stone.
4. Stone stamp, "Uati lady of the North."
5, 6. Sun-dials; temple of Apollo.
7–9. Stone rosettes, from doorway (?); temple of Apollo.
10. Portion of stone weight (?).
11. Small altar.
12. Fragment of column; temple of Dioskouroi (inscrip. 688).

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2. Plaster figure.
4, 5. Rude stone figures.
6–8. Reclining female figure on a couch.

XX.

1. Bronze figure, winged and crowned.
2. Bronze figure on a bier or coffin.
3. Head of Bes, with heads of animals at side, and feather crown.
4. Portion of impression of a seal.
5. Impression of seal of the keeper of the treasury of Aahmes, priest of Neith.
6. Impression of scarab seal; finger-marks on the clay.
7. Heart amulet in blue paste.
8. Double-headed amulet; Hobs and Horus?
9. Piece of bowl in blue paste.
10, 12, 16. Pieces of engraved shell of *Tridacna*.
11. Piece of worked mother-of-pearl.
13. Glass seal, green.
14. Model celt, amulet, pierced for suspension; blue paste.
15. Piece of etched ostrich egg.
17. Phoenician cartouche stamp in bronze.
18. Haematite cylinder, found with 17.
19. Alabaster seal.
20–22. Impressions of seals found together. Second century A.D.
23. Green glass draughtsman (?).
24. Blue glass pendant.
25. Appliqué terra-cotta, gilt.
26. Bronze key.
27. Bezil of silver ring.
28. Tablet of limestone.
29. Carnelian ring, burnt.
30. Genius of green glazed pottery.
31. Dark-blue glass double head.
32. Slip of steatite.
33. Iron key-ring with bezil.
34. Mirror-ring of speculum metal.
35. Limestone tablet.

XXV.

1. Bronze axe.
2. Bronze trowel.
3. Bronze adze.
4. Bronze chisel.
5. Iron hoe.
6. Iron mortar-rake.
7–10. Alabaster pegs.
11. Lapis-lazuli cartouche, Ptolemy II.
12, 13. Green pottery libation vase.
14–17. Green pottery cups for offerings.
18. Bronze knife.
19. Bronze axe.
20–31. Samples of materials.

XXVI.

32. Model corn-rubber, lower stone, quartzite.
33. Upper stone, with two handles.
34. Model mortar, limestone.

XXVII.

Gold chain, band with repoussé figures, shell for unguents, and pendants.

XXVIII.

Silver mirror-case, piece of disc, pendants, and figures of Iris and Osiris as uræi, from ends of bracelets.

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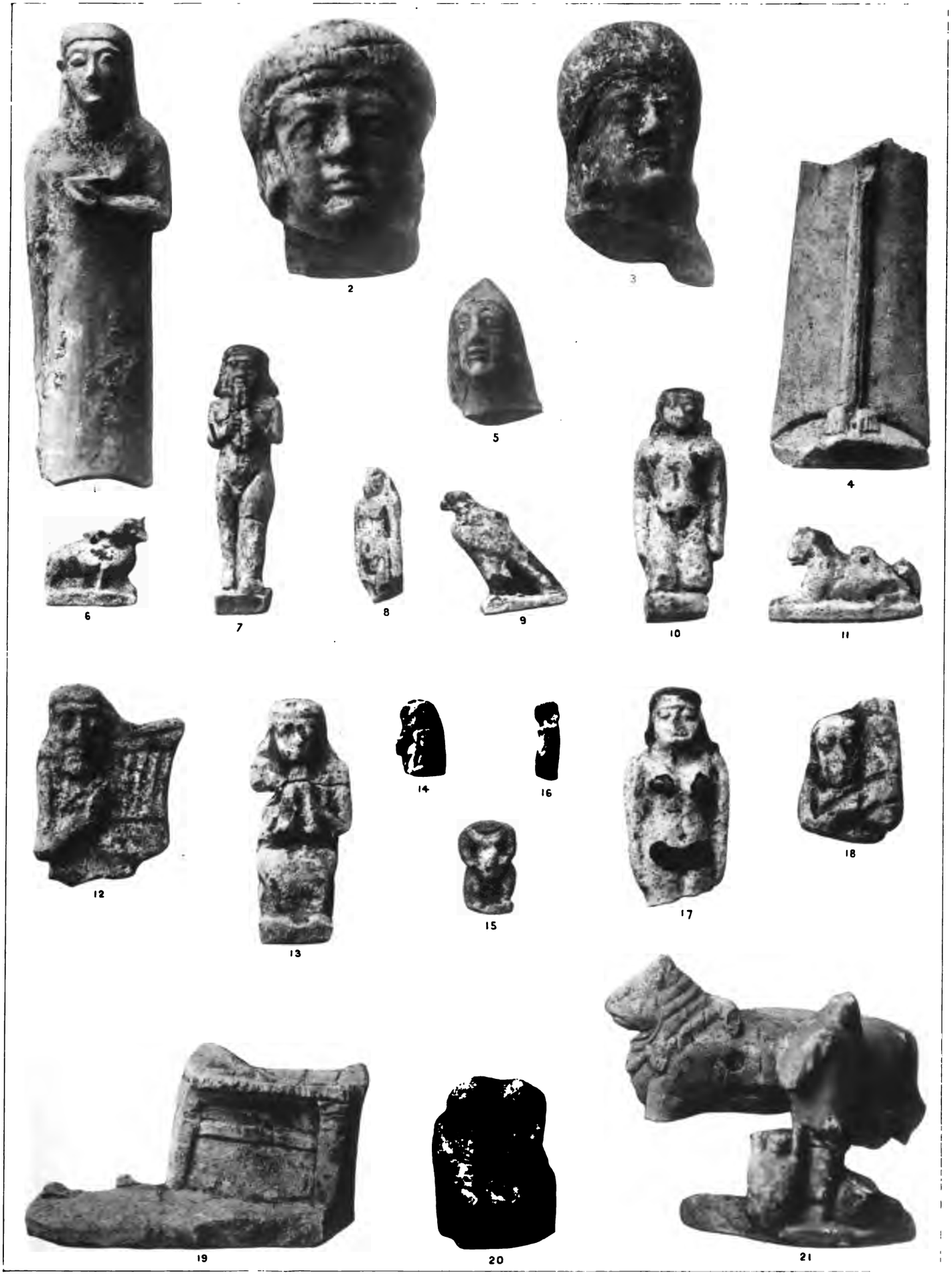
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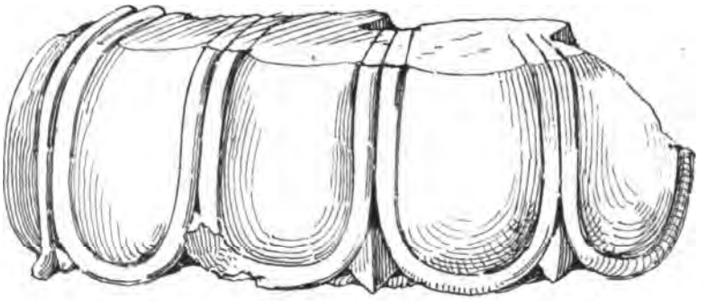
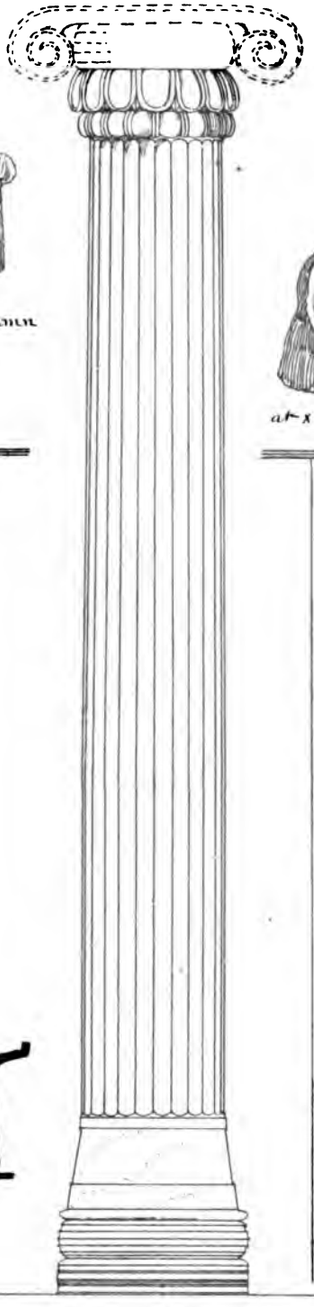
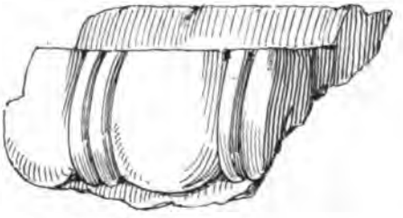
NAUKRATIS: RESTORATION OF A COLUMN OF THE ARCHAIC TEMPLE OF APOLLO
WITH ENLARGED DRAWINGS OF THE ACTUAL REMAINS.

The dotted portion is conjectural, though a piece of volute was found.
The fragments drawn are the authority for the remainder. The base was found entire.

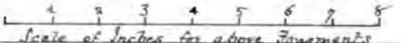




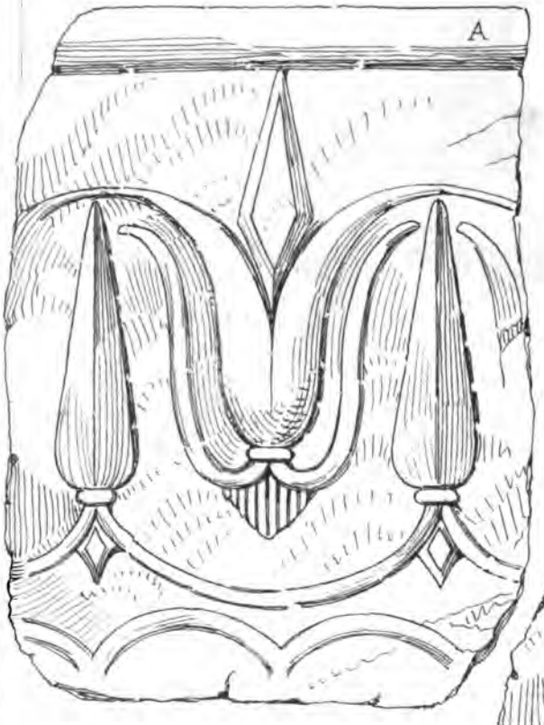
Fragment of Column



at xxx are traces of red colour.

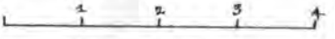


Scale of Inches for above Fragments

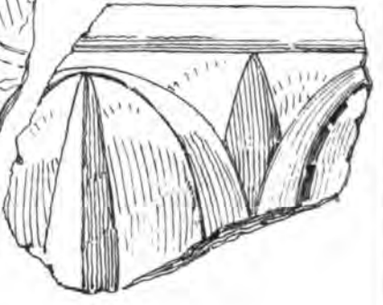


Section at A.

Fragments of Necking Ornament belonging to another column.



Scale of Inches.

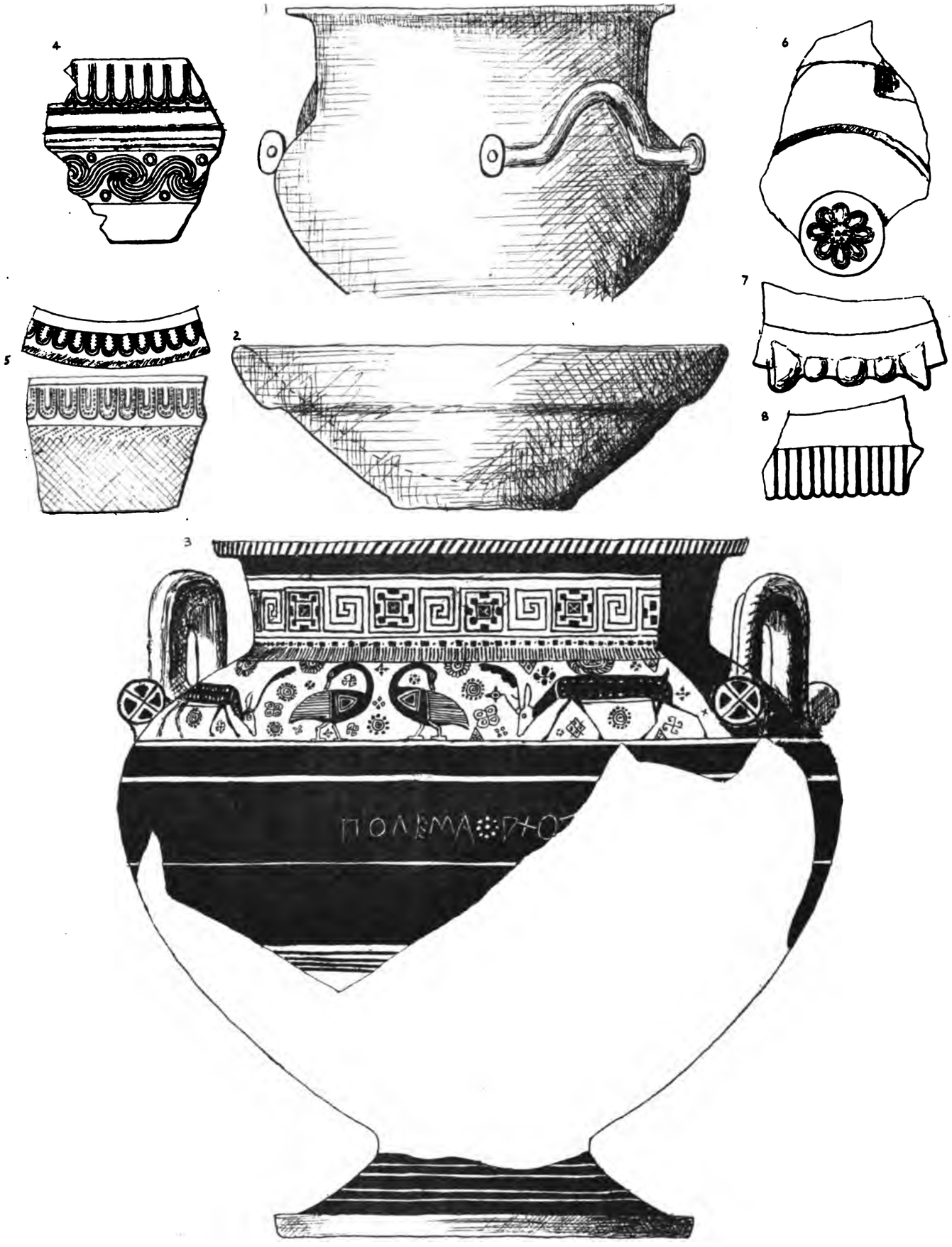


Sketch section of another piece of base found. Similar in size to the bottom member of the base of the Column

~~Restored Elevation of Column.~~

~~Scale of Inches 0 1 2 3 4 5 6 7 8 Feet~~

Gerald Horsley Del.



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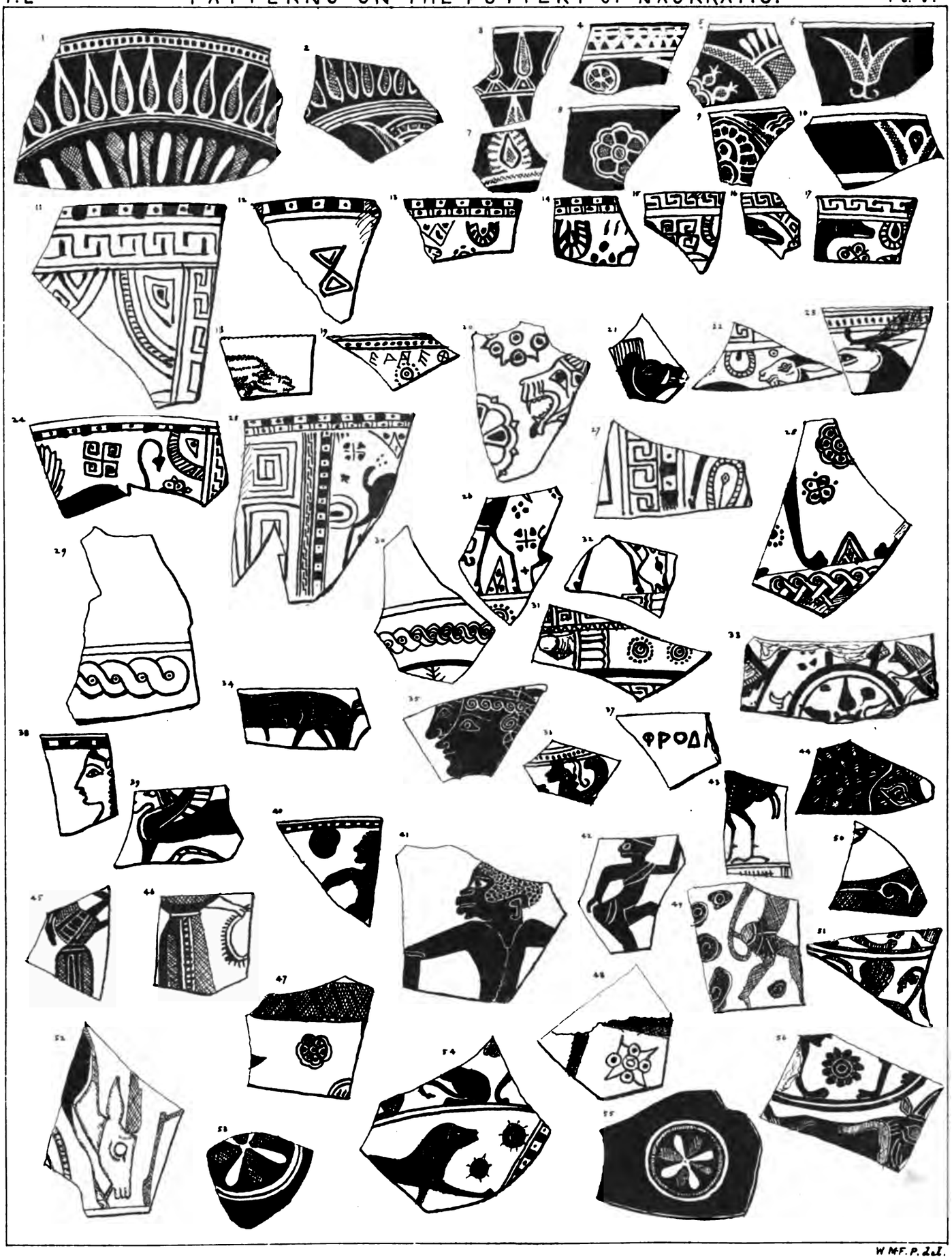

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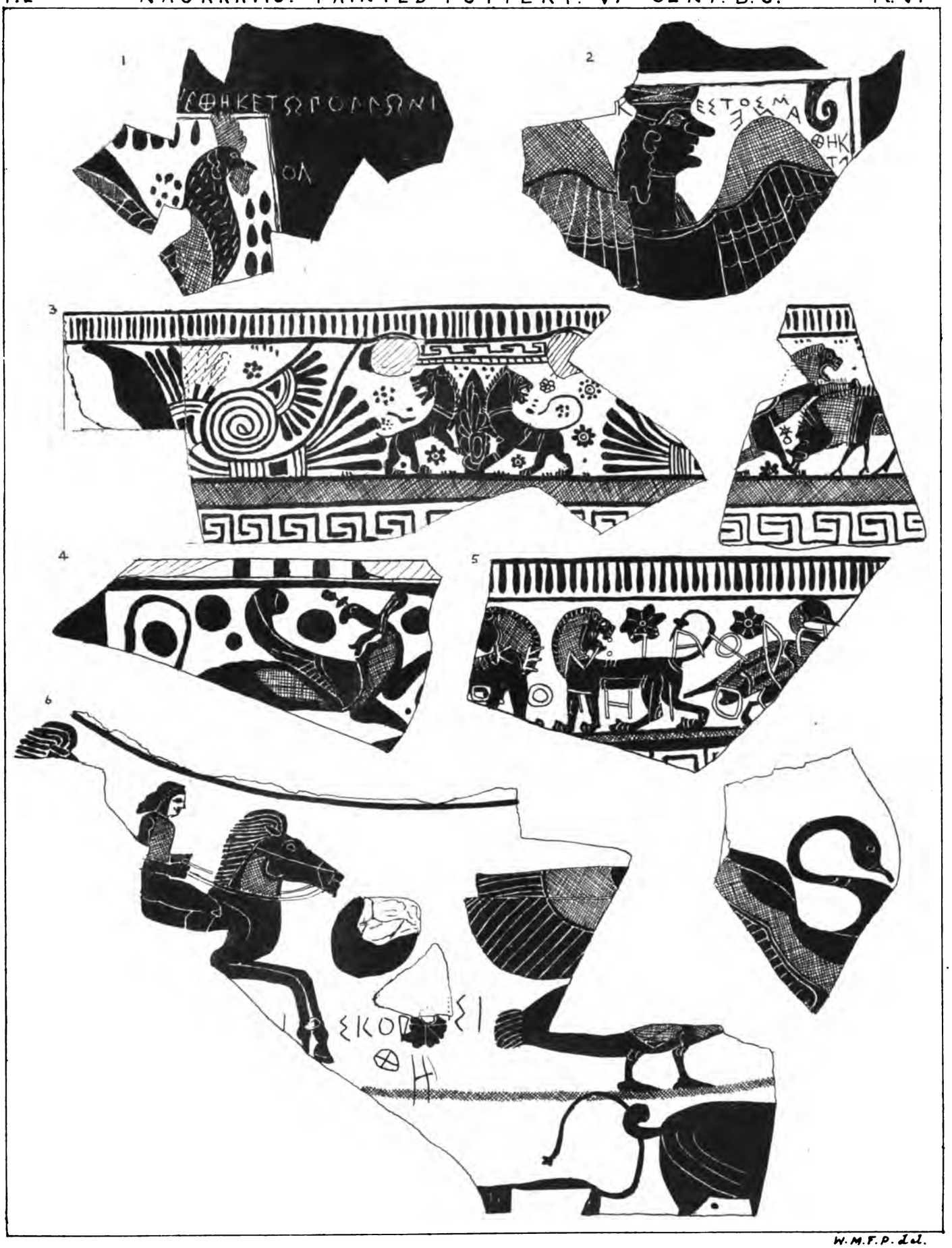

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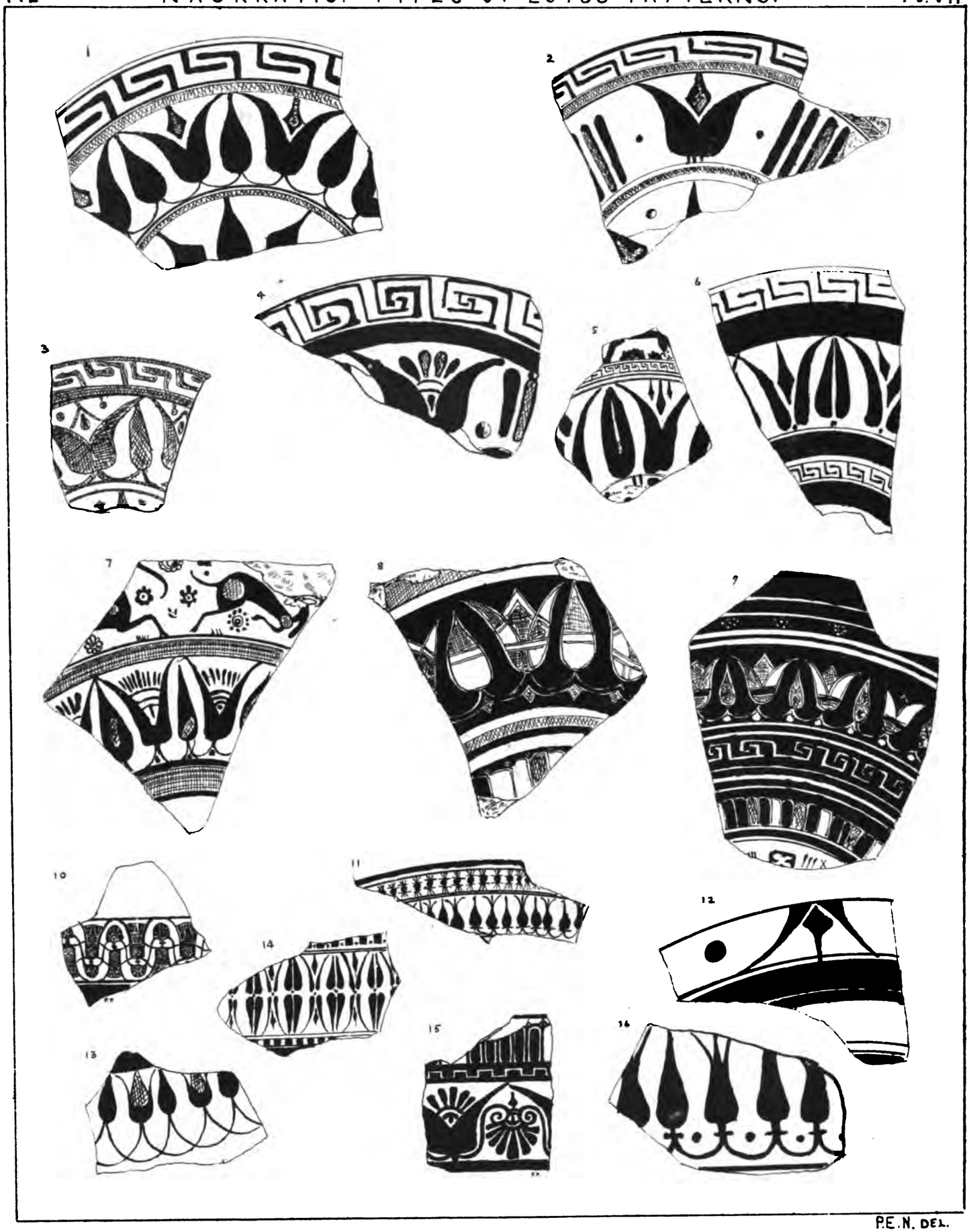


P.E.N. DEL.

NAŪKRATIS. TEMENOS OF APOLLO. BOWL, INSIDE. See PL. IX. PL. VIII.

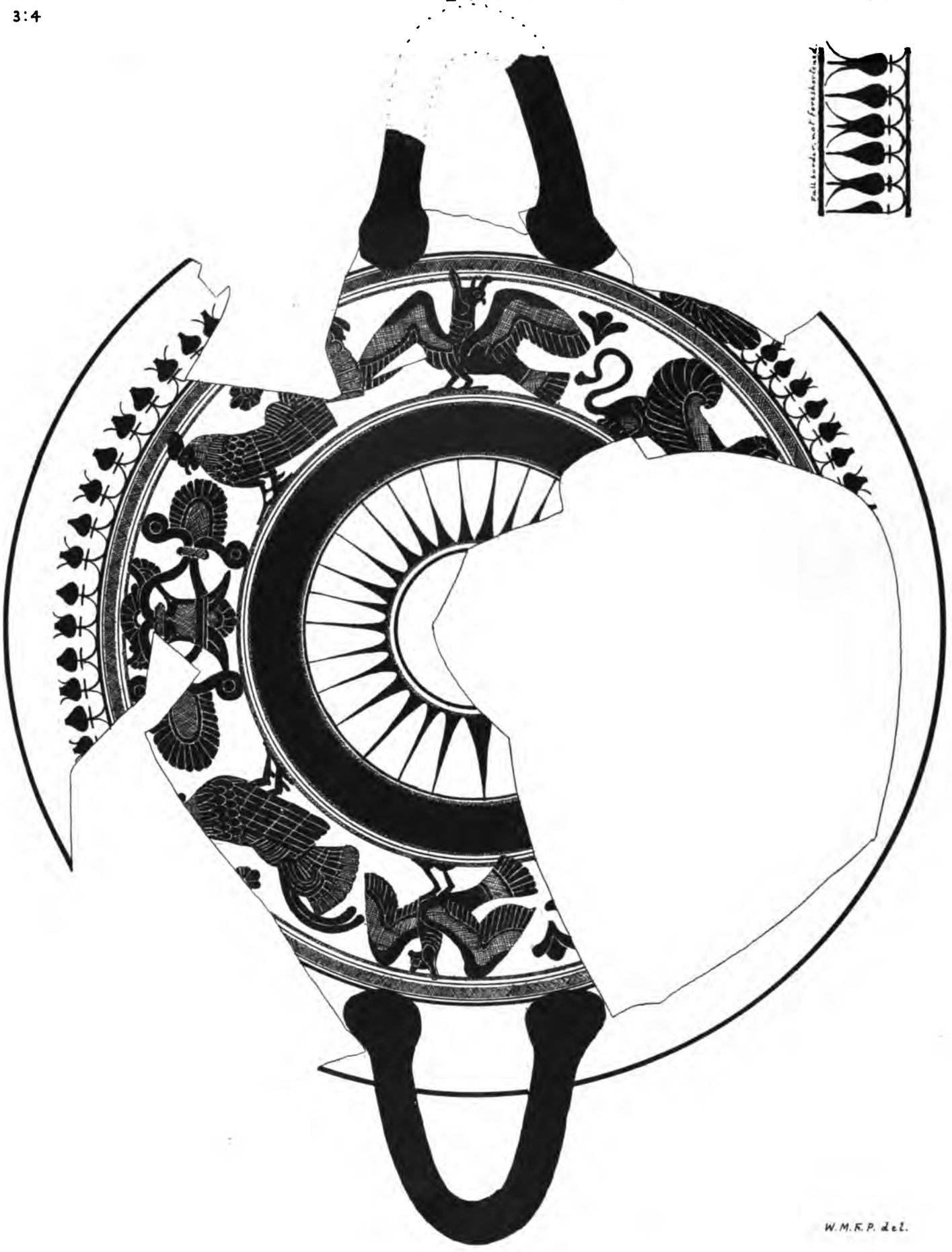
3:4

W.M.F.P. del.

NAUKRATIS. TEMENOS OF APOLLO BOWL, OUTSIDE. See Pl. VIII

Pl. IX.

3:4



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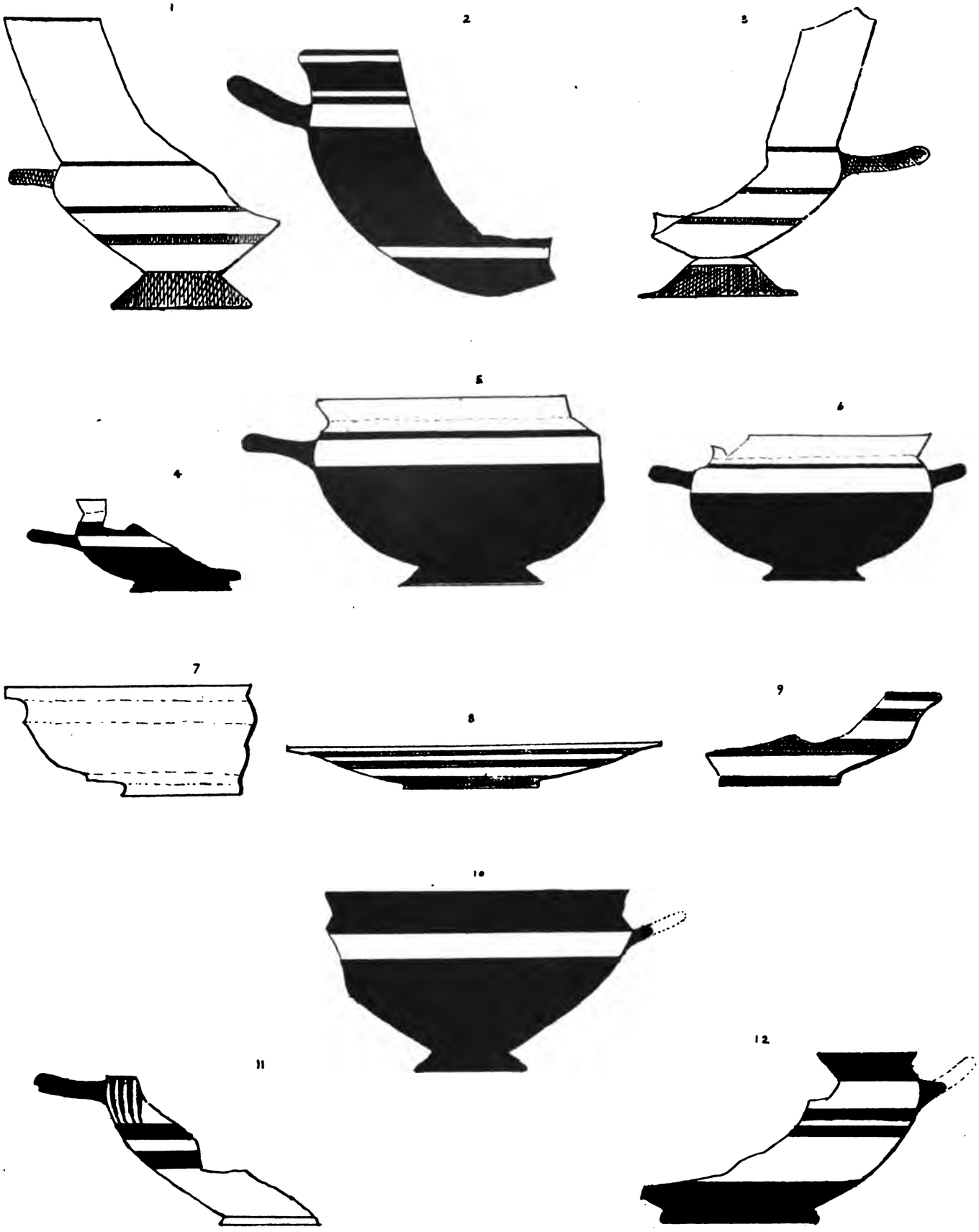
1:2 NAUKRATIS. TYPES OF BOWLS. VITH CENT. B.C. PL. X



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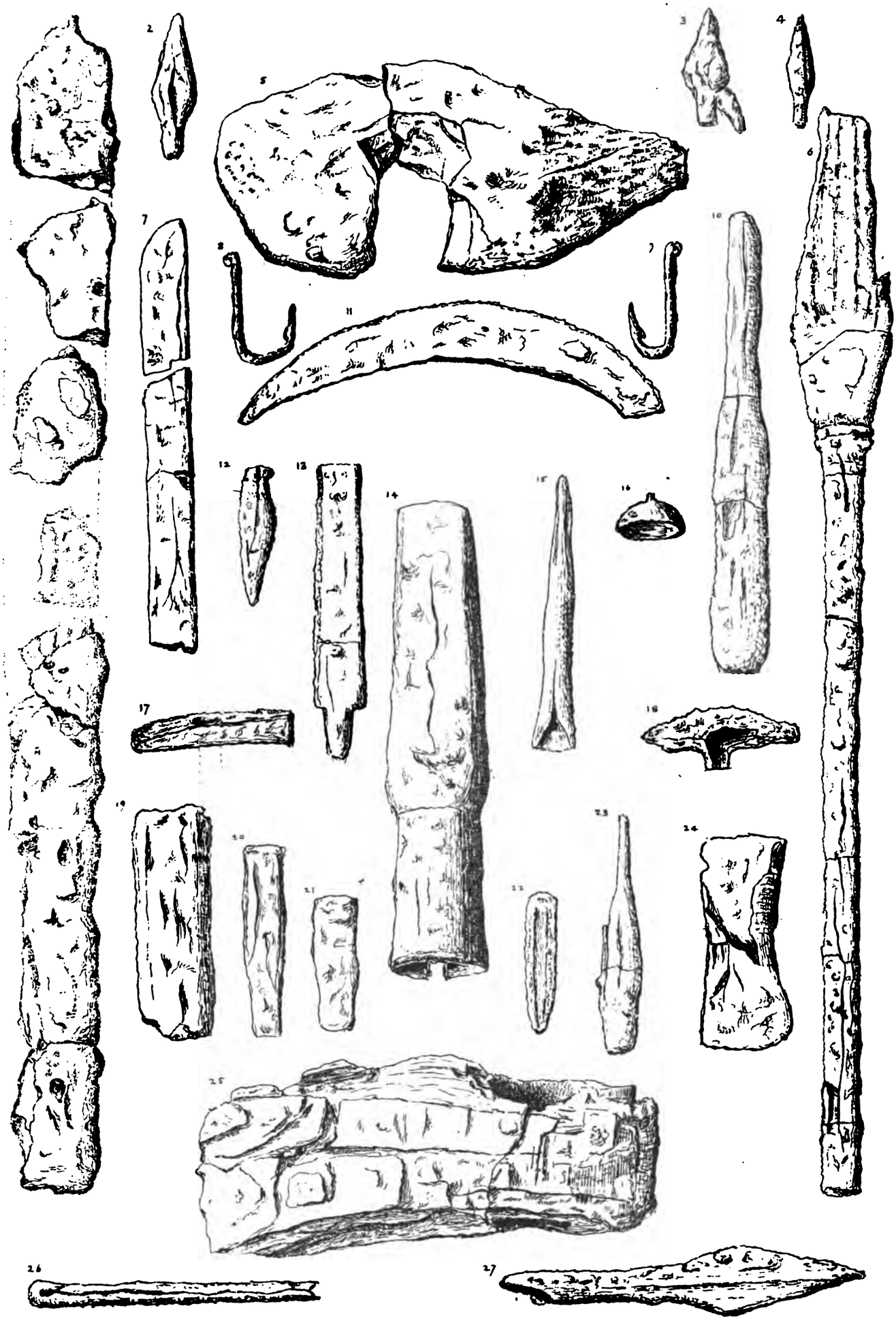

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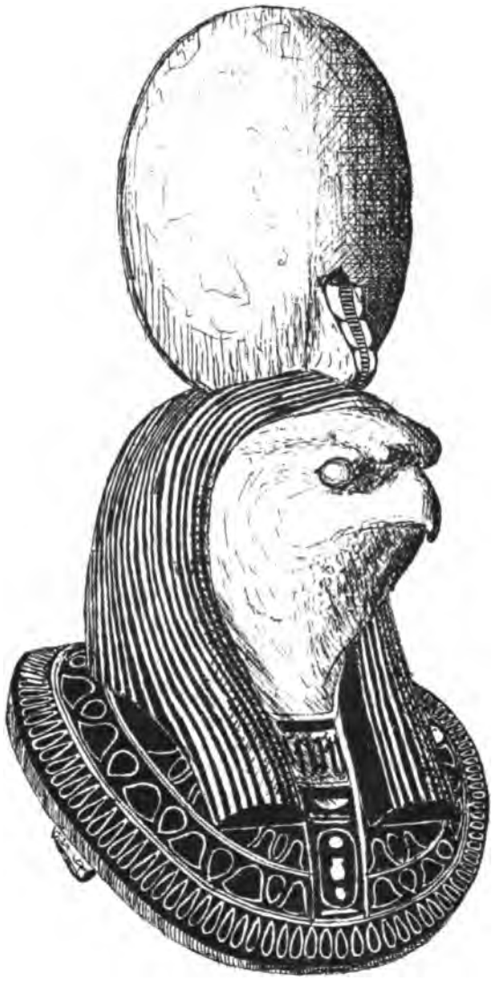
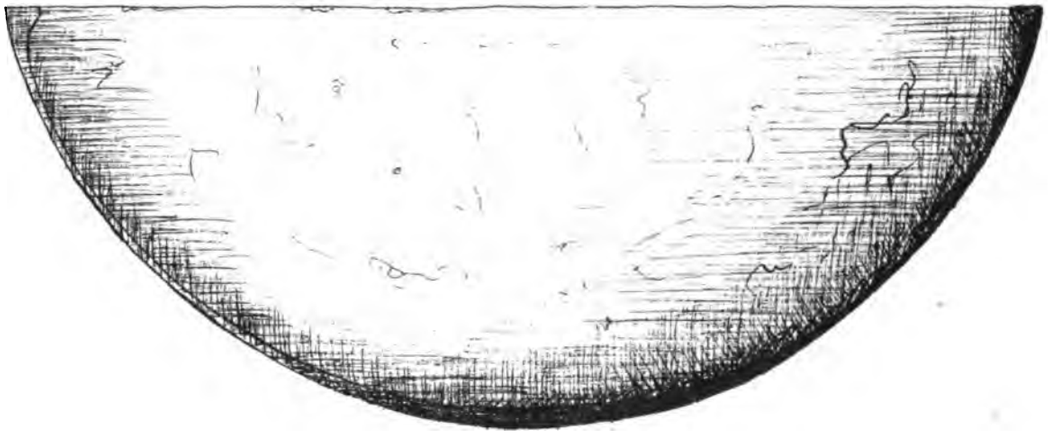
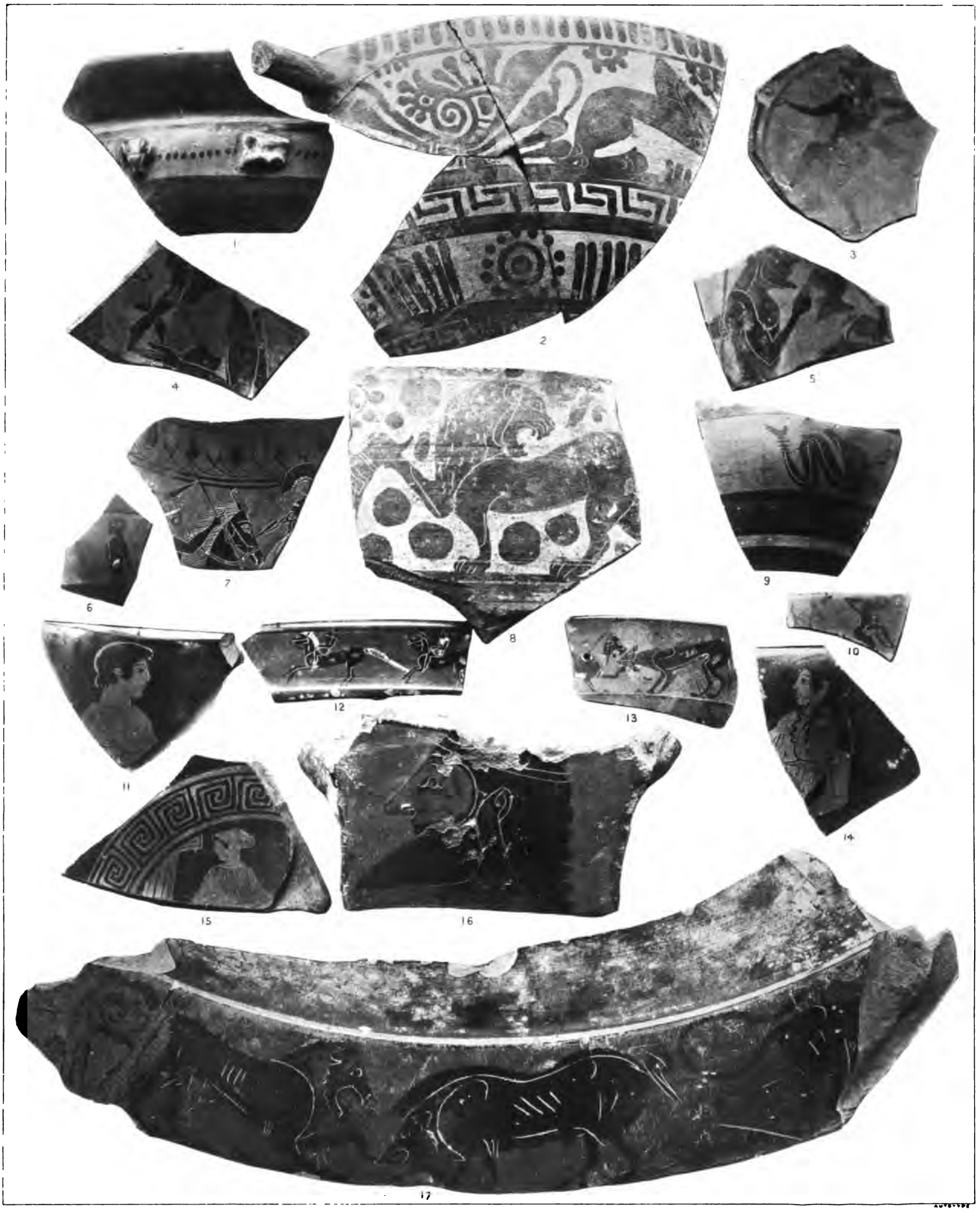


Figure-head of sacred Bark of Ra. Kom Afrin.

Bronze bowl. Naukratis.



W. M. F. P. del.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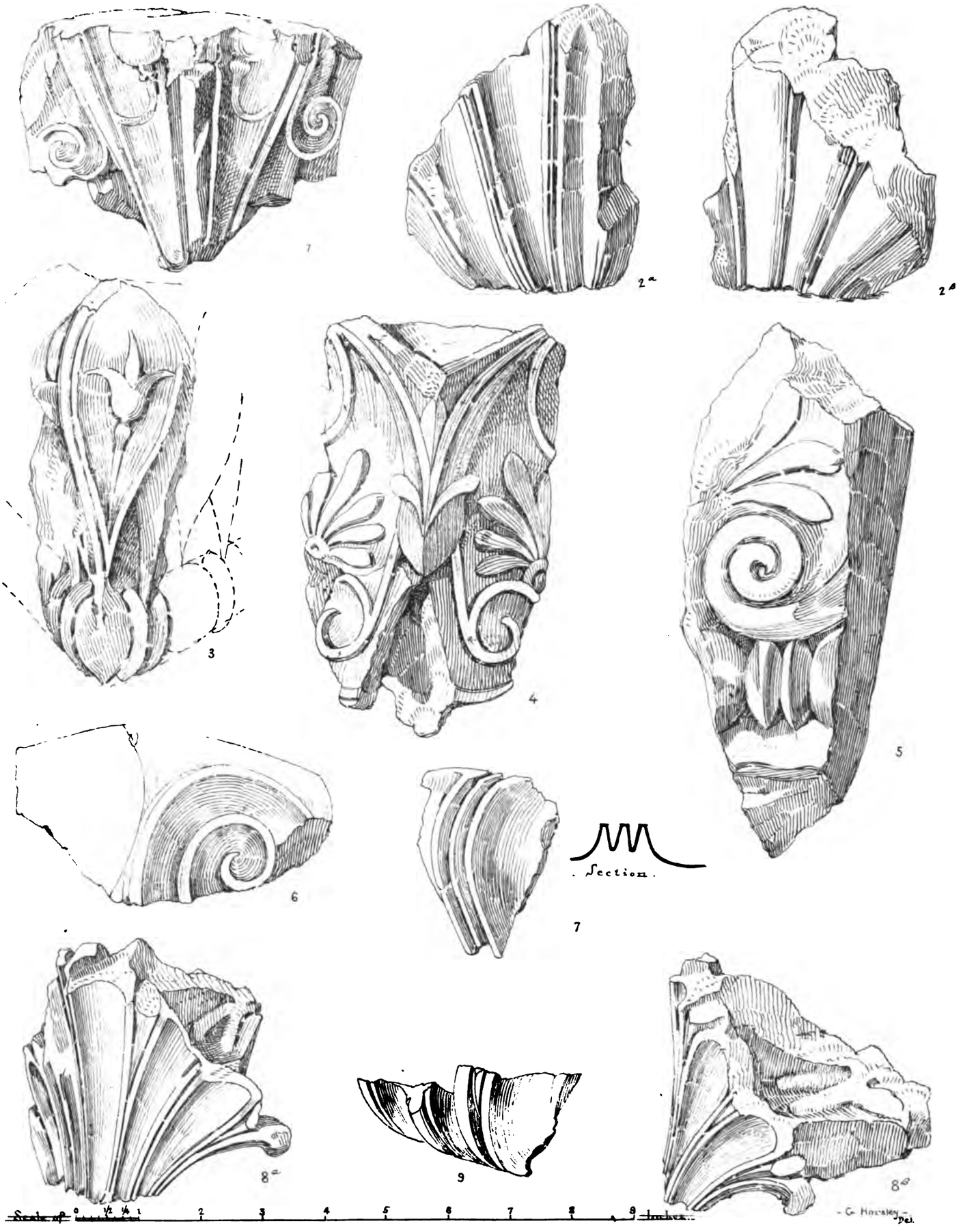
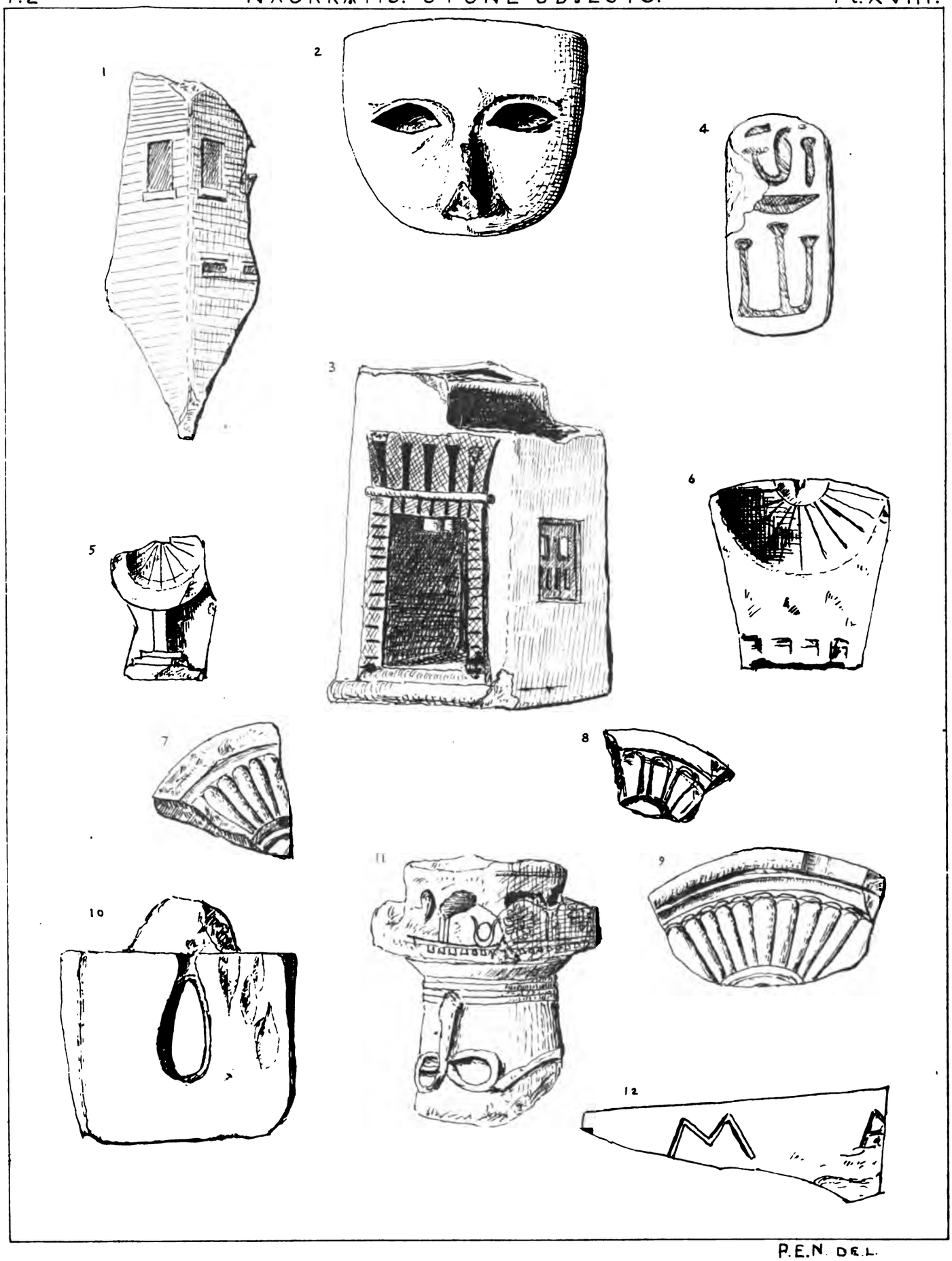
NAUCRATIS MARBLE FRAGMENTS FROM THE SECOND TEMPLE OF APOLLO. PL. XIV.





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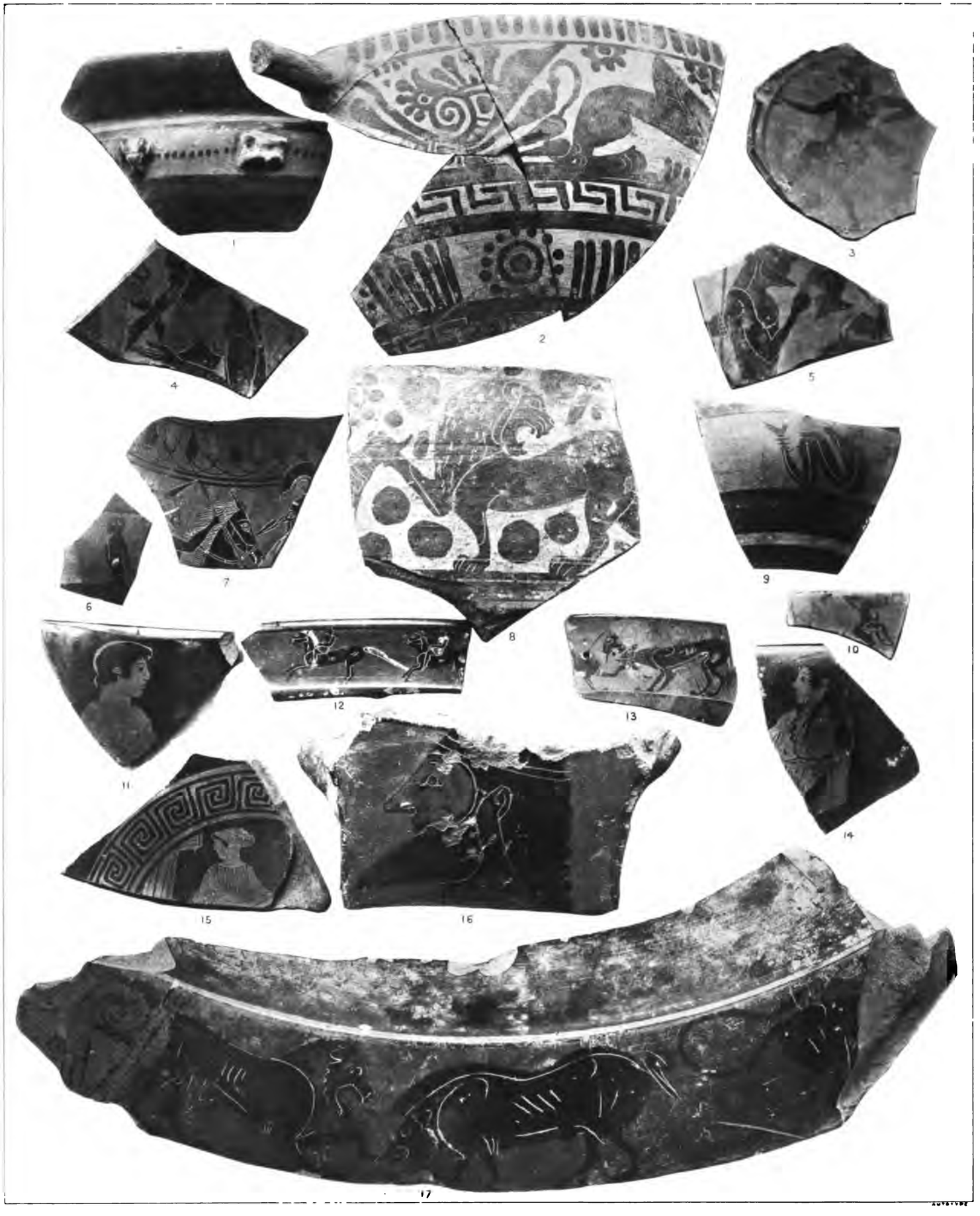
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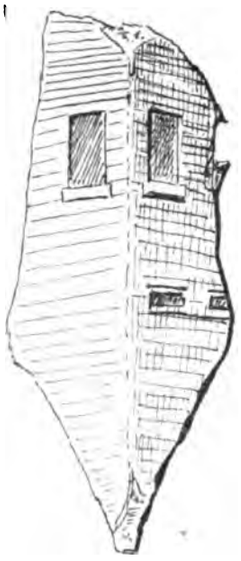
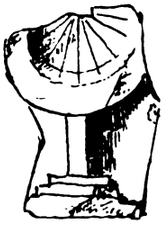
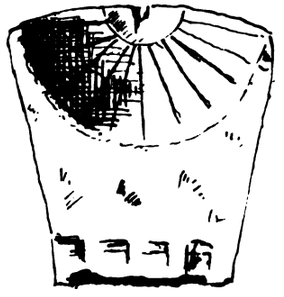
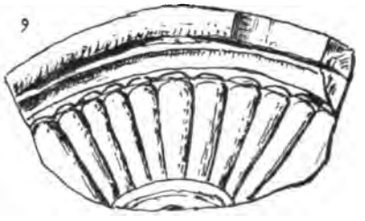
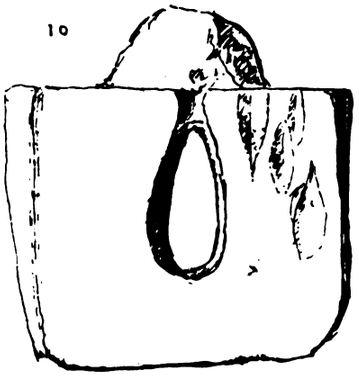
1:5 POTTERY, ROMAN: AND AMPHORA HANDLES, VITH TO IVTH CENT. B.C. PL. XVII.

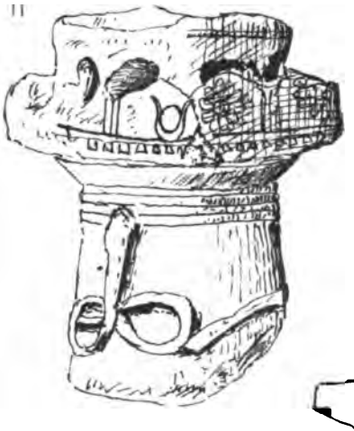


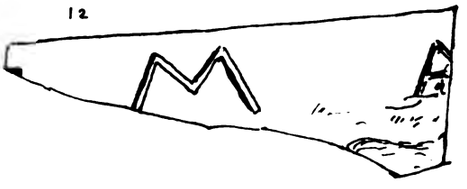












P.E.N. DEL.

NAUKRATIS. RUDE STONE FIGURES

PL. XIX.

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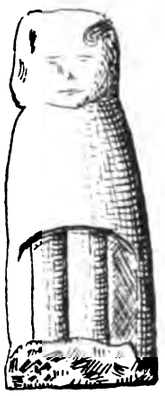

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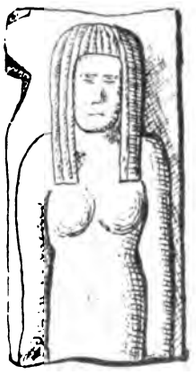

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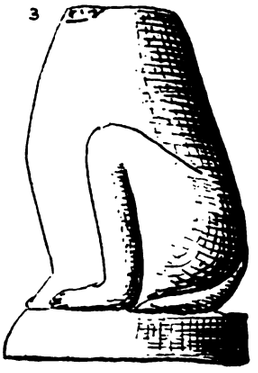

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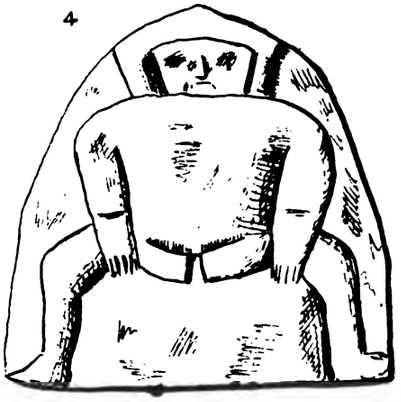

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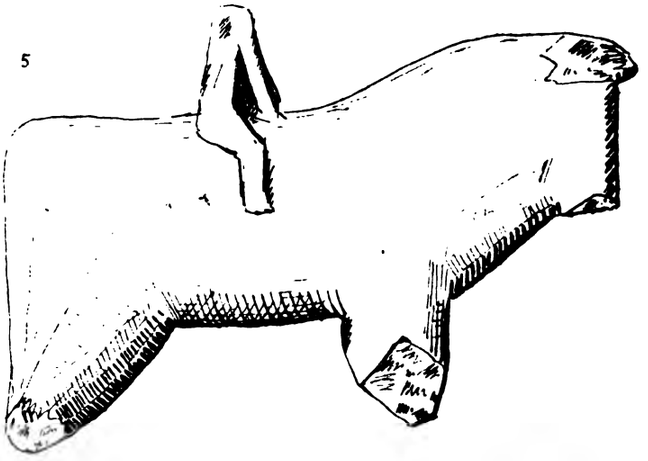

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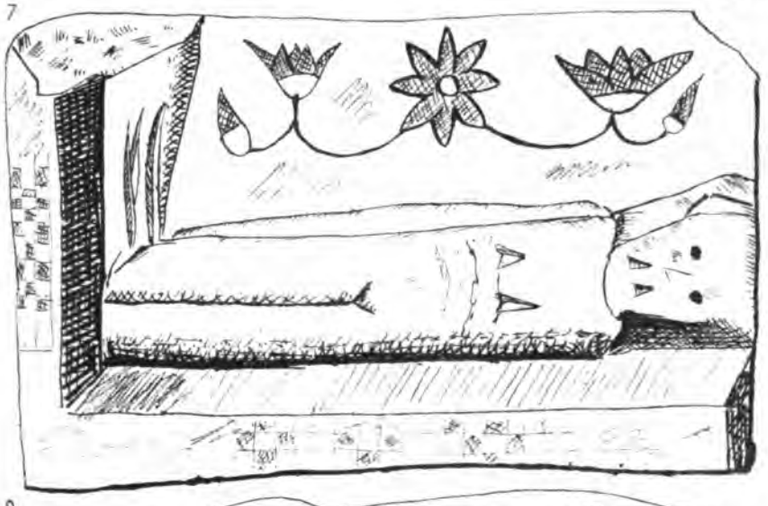

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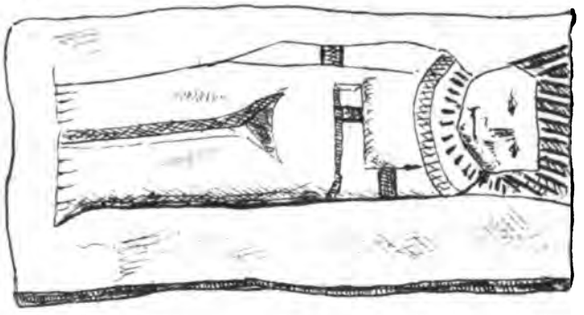

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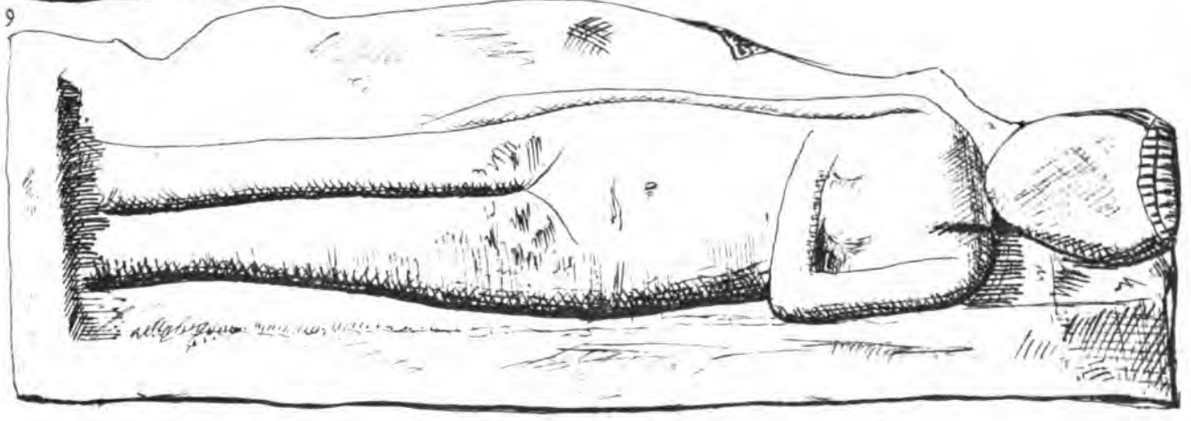
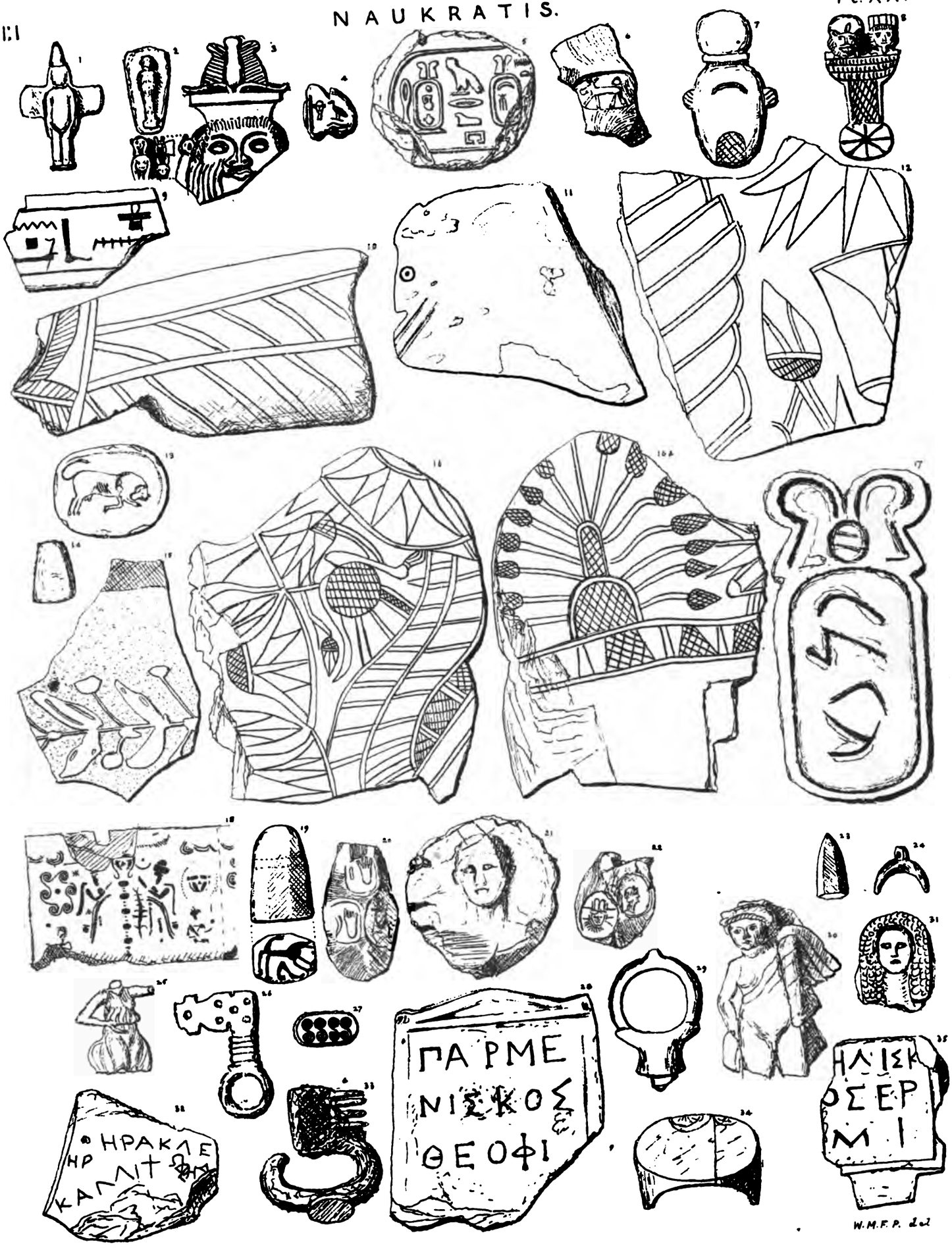


PEN

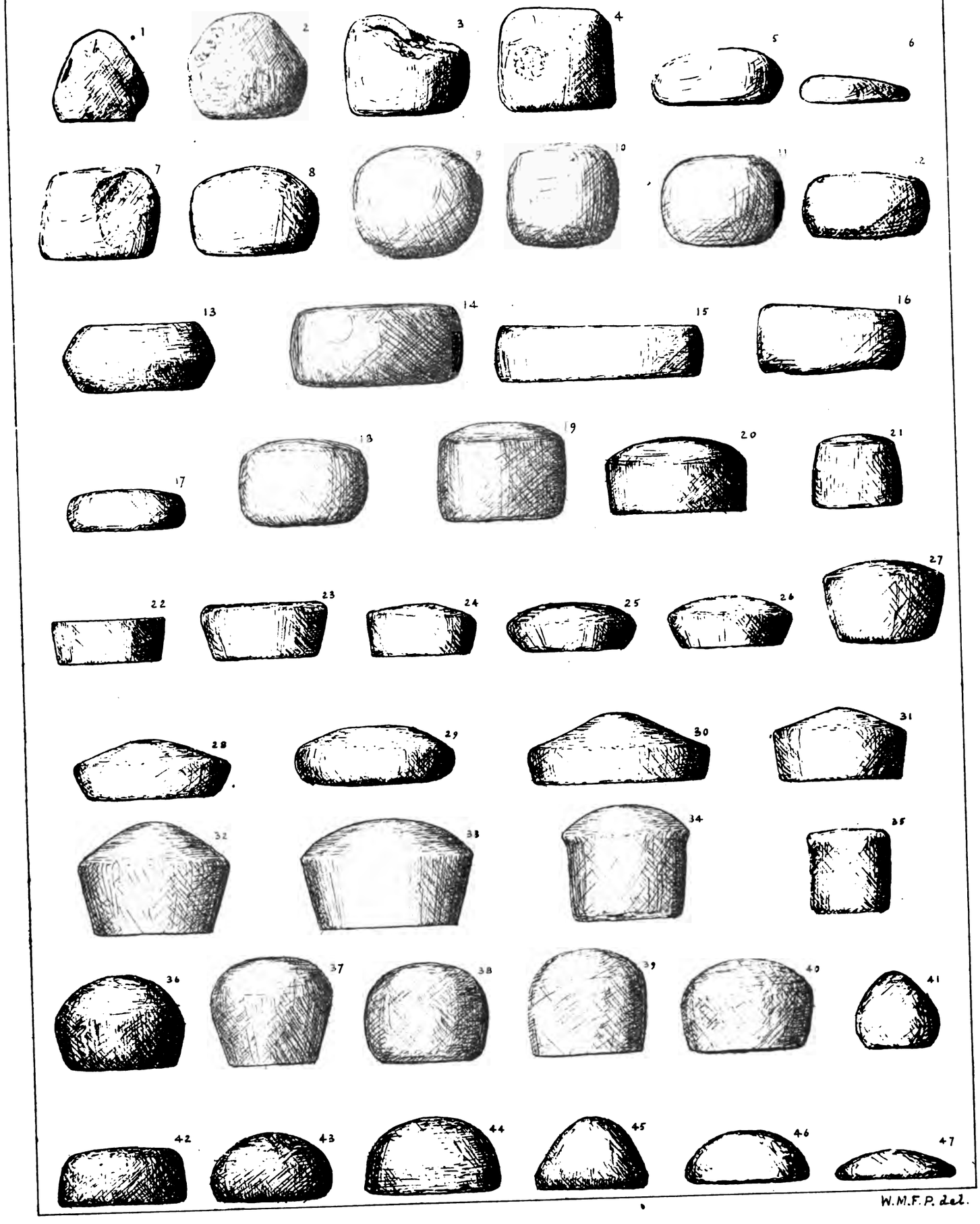
NAUKRATIS.

1:1

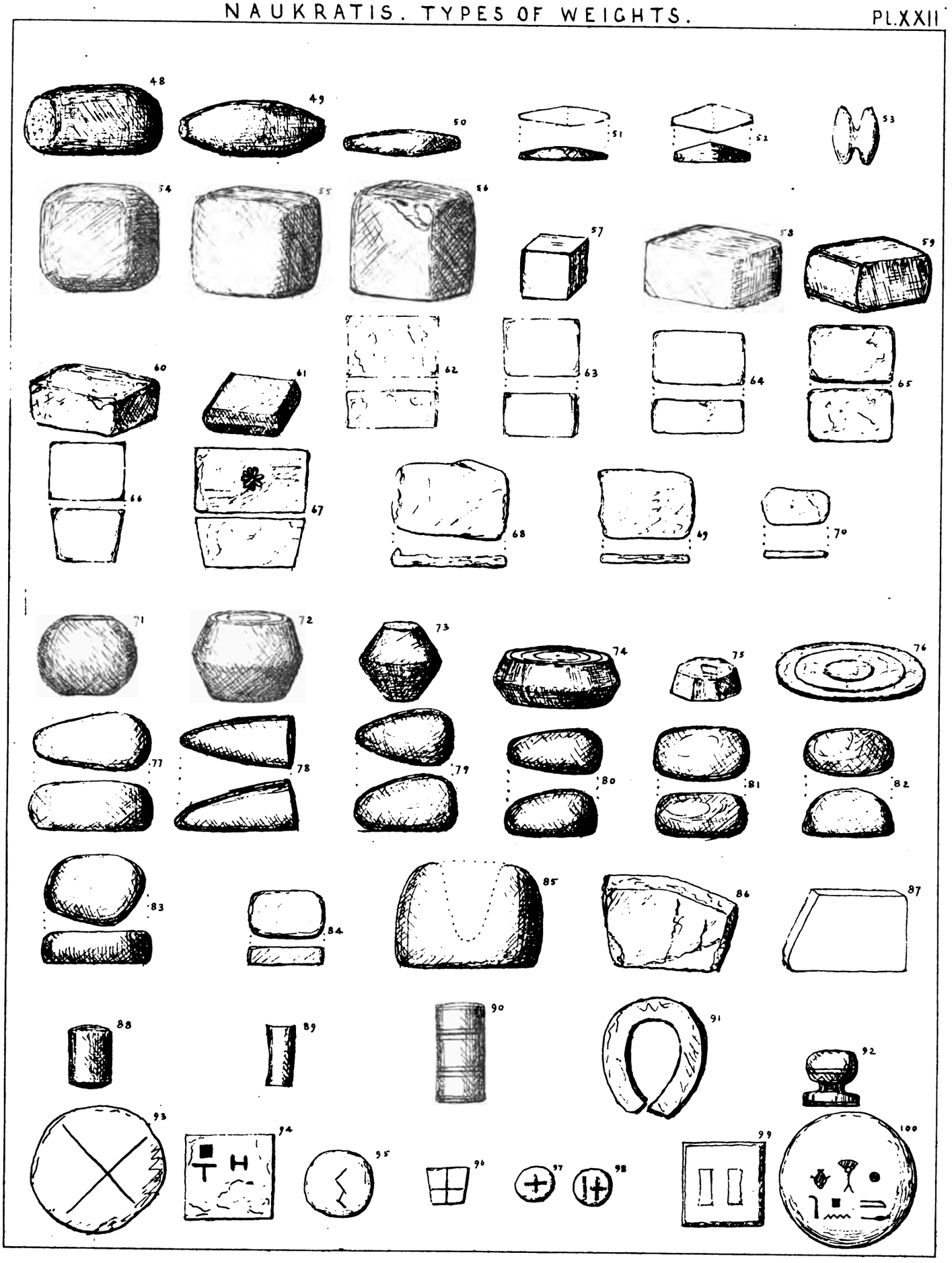


W.M.F.P. del.

NAUKRATIS. TYPES OF WEIGHTS.



W.M.F.P. del.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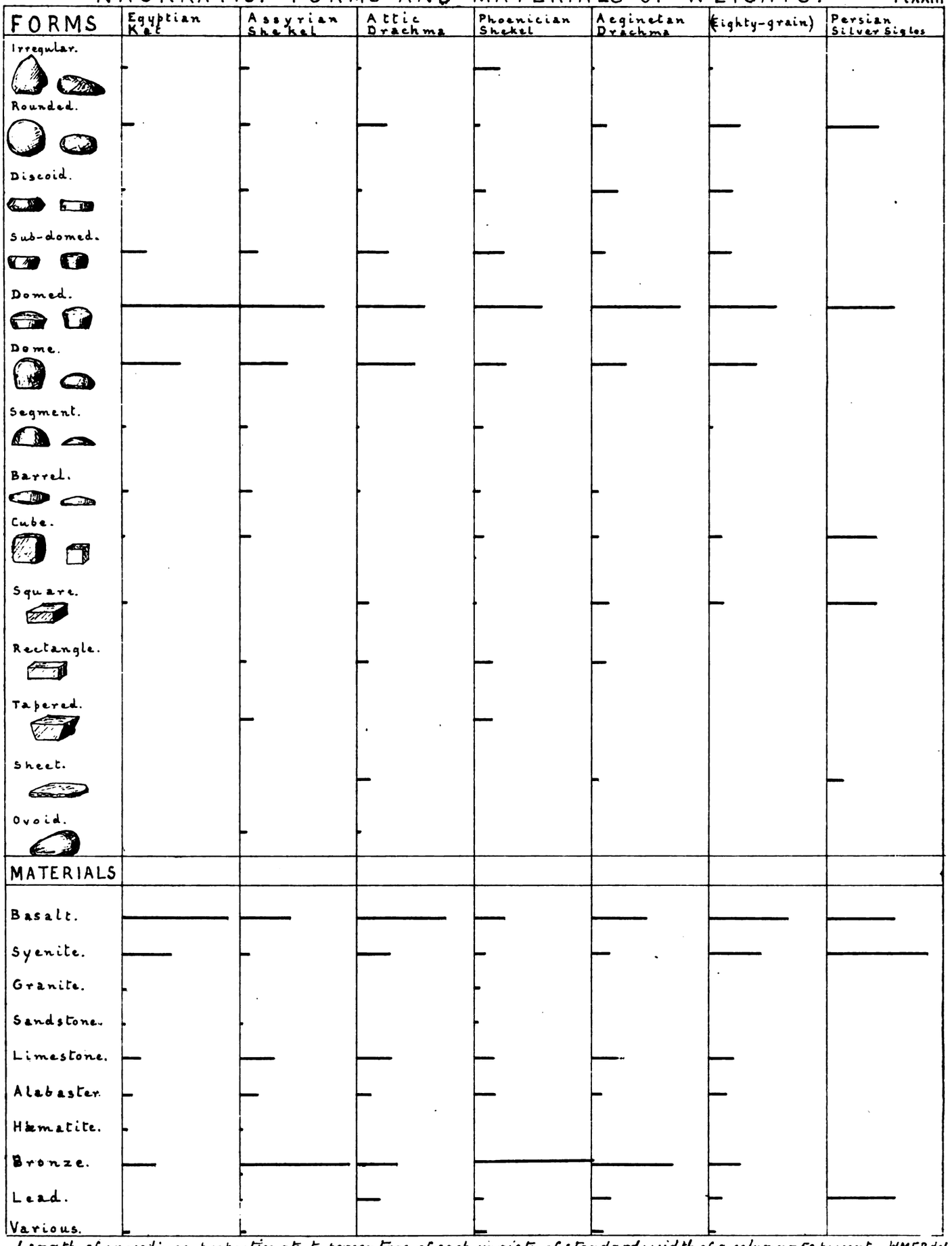
W. M. F. P. del.

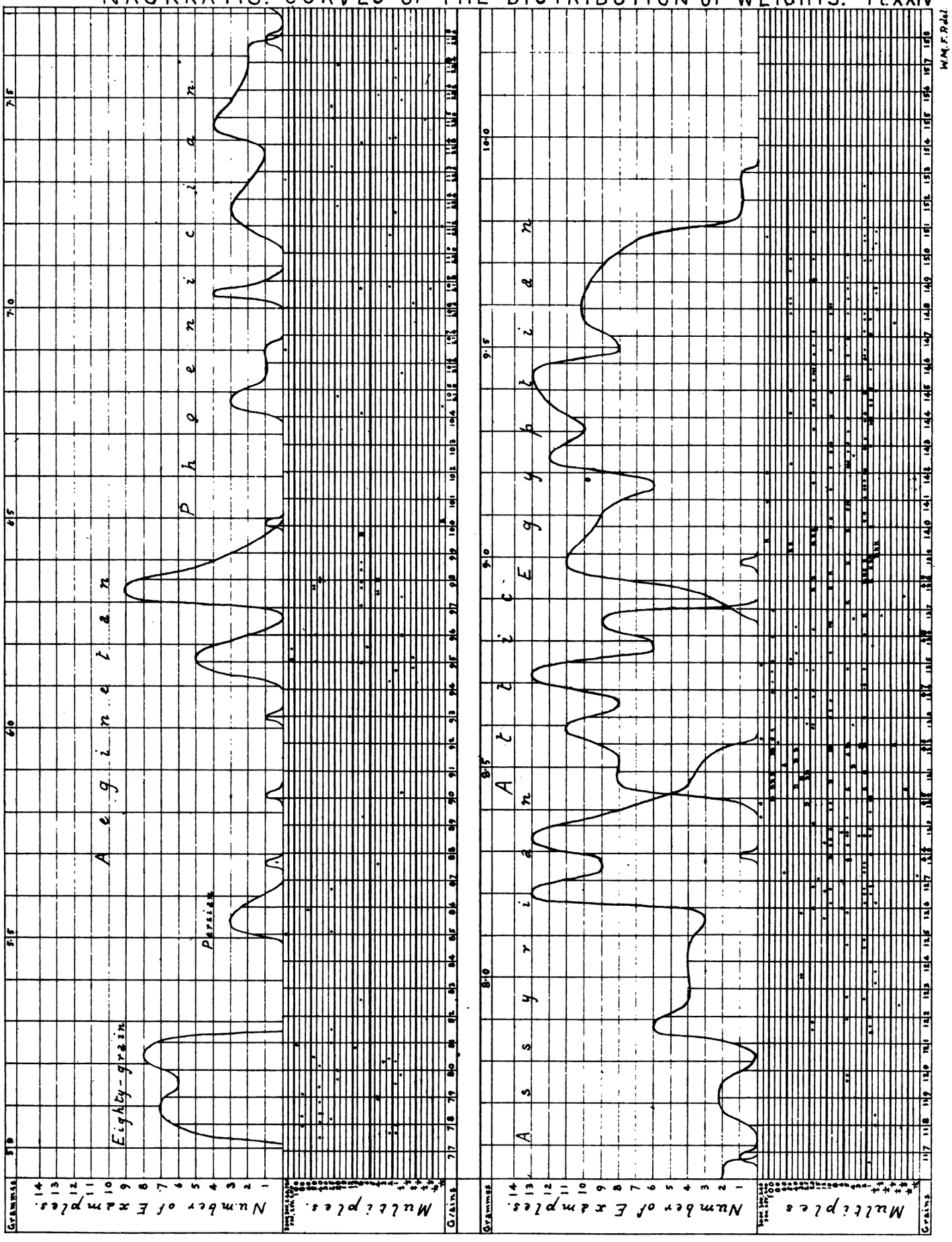
NAUKRATIS. FORMS AND MATERIALS OF WEIGHTS.

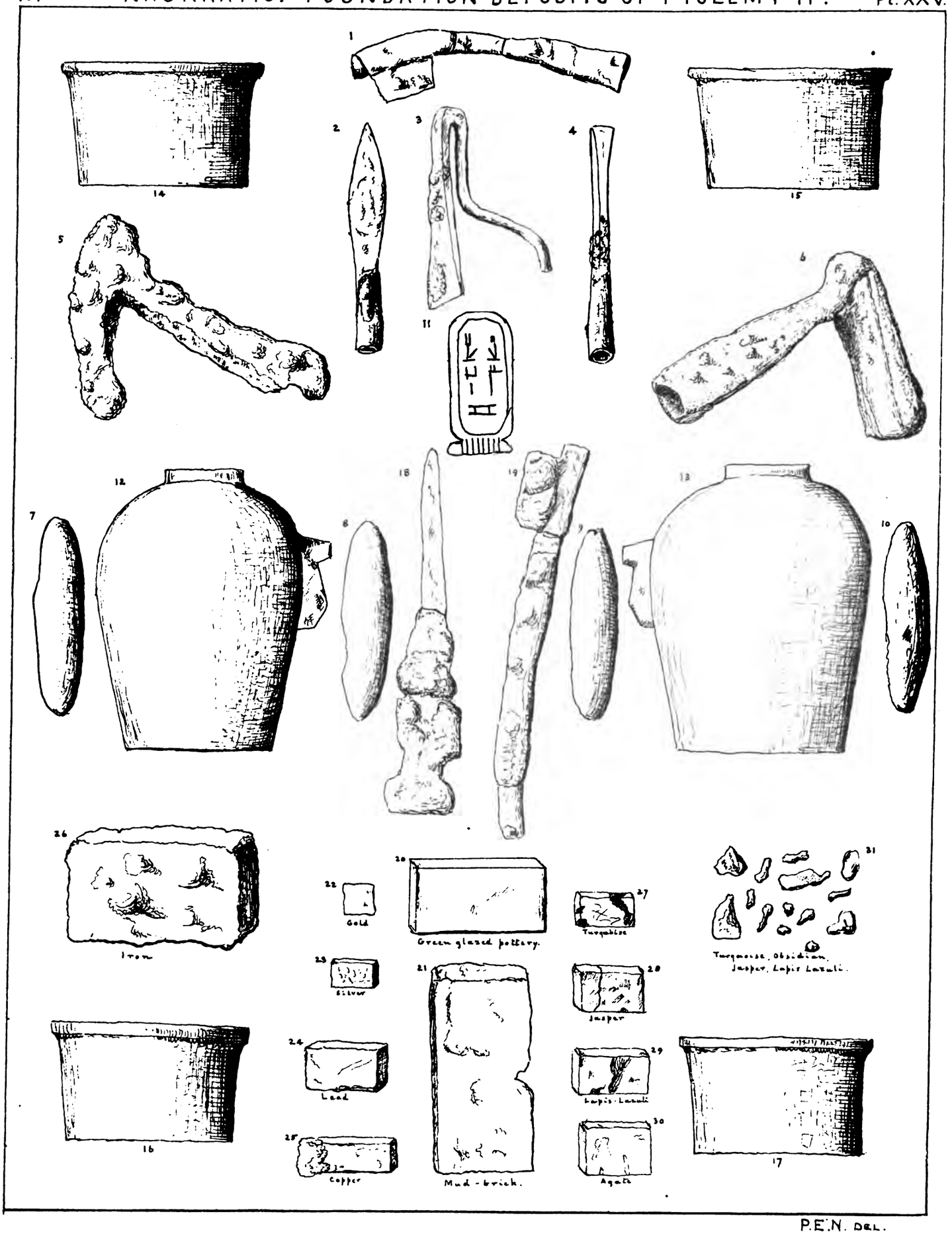
PLXXIII



Length of cross lines proportionate to percentage of each variety of standard; width of a column = 50 percent. WMFP del.

NAUKRATIS. CURVES OF THE DISTRIBUTION OF WEIGHTS. PL. XXIV

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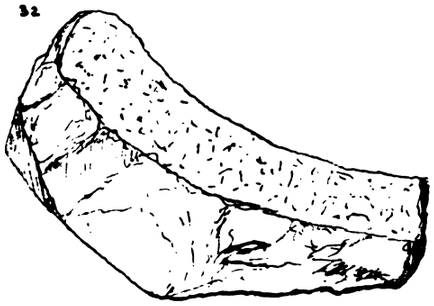
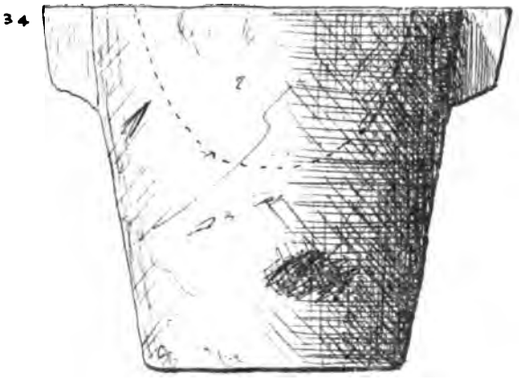
Iron
Gold
Green glazed pottery.
Turquoise
Turquoise, Obsidian, Jasper, Lapis Lazuli.
Silver
Jasper
Lead
Lapis-Lazuli
Copper
Mud-brick.
Agate

P.E.N. DEL.





Great Temenos Wall

North-West Corner.

North-East Corner

(According to statements of the finders)

FOUNDATION DEPOSITS.

Placed beneath a building by Ptolemy II.

Scale 1/10

Numbers refer to objects in this plate and the preceding.

Ptolemaic Wall.

Ptolemaic Wall

Pocket of White Sand.

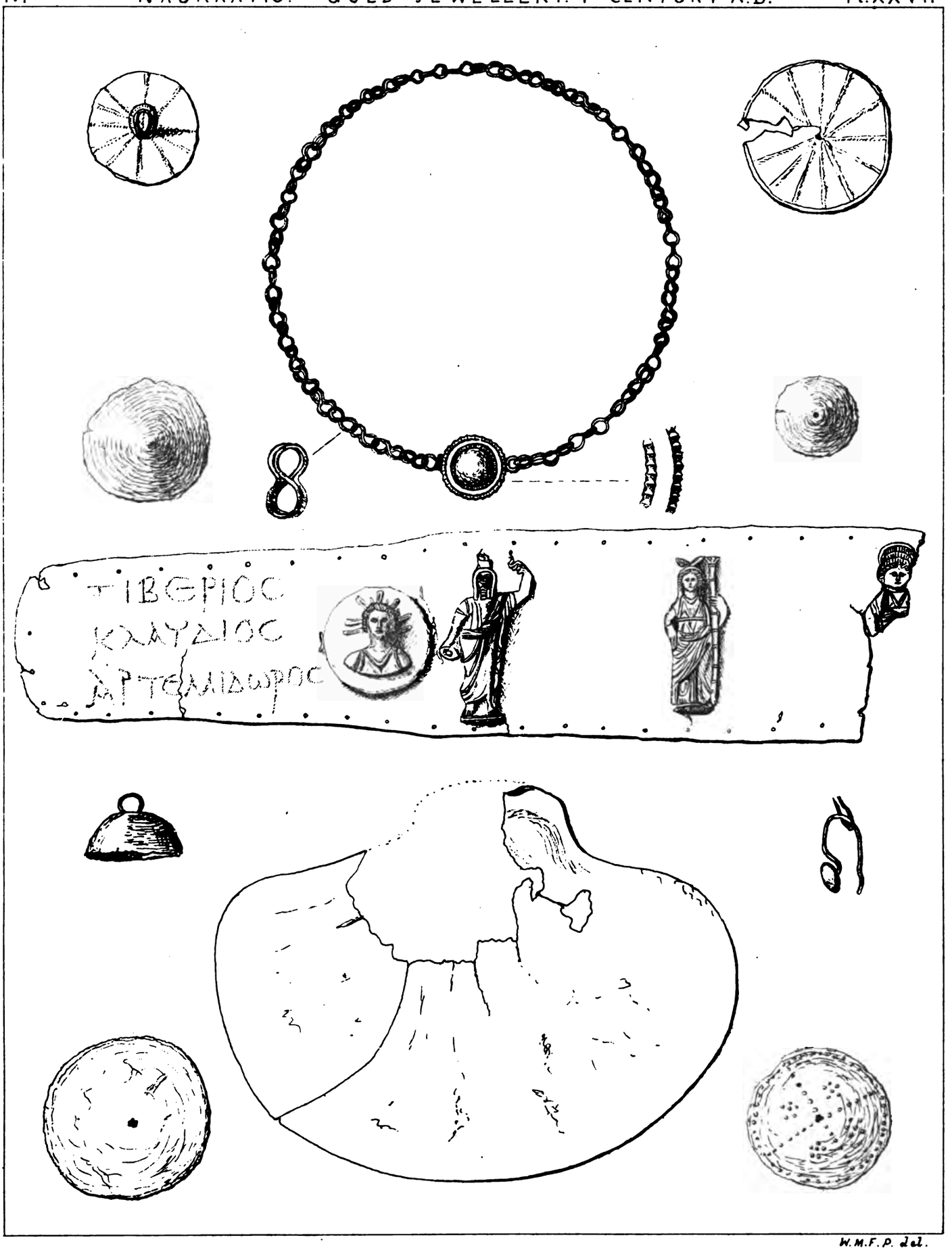
Disturbed first, no details obtained.

South-West Corner

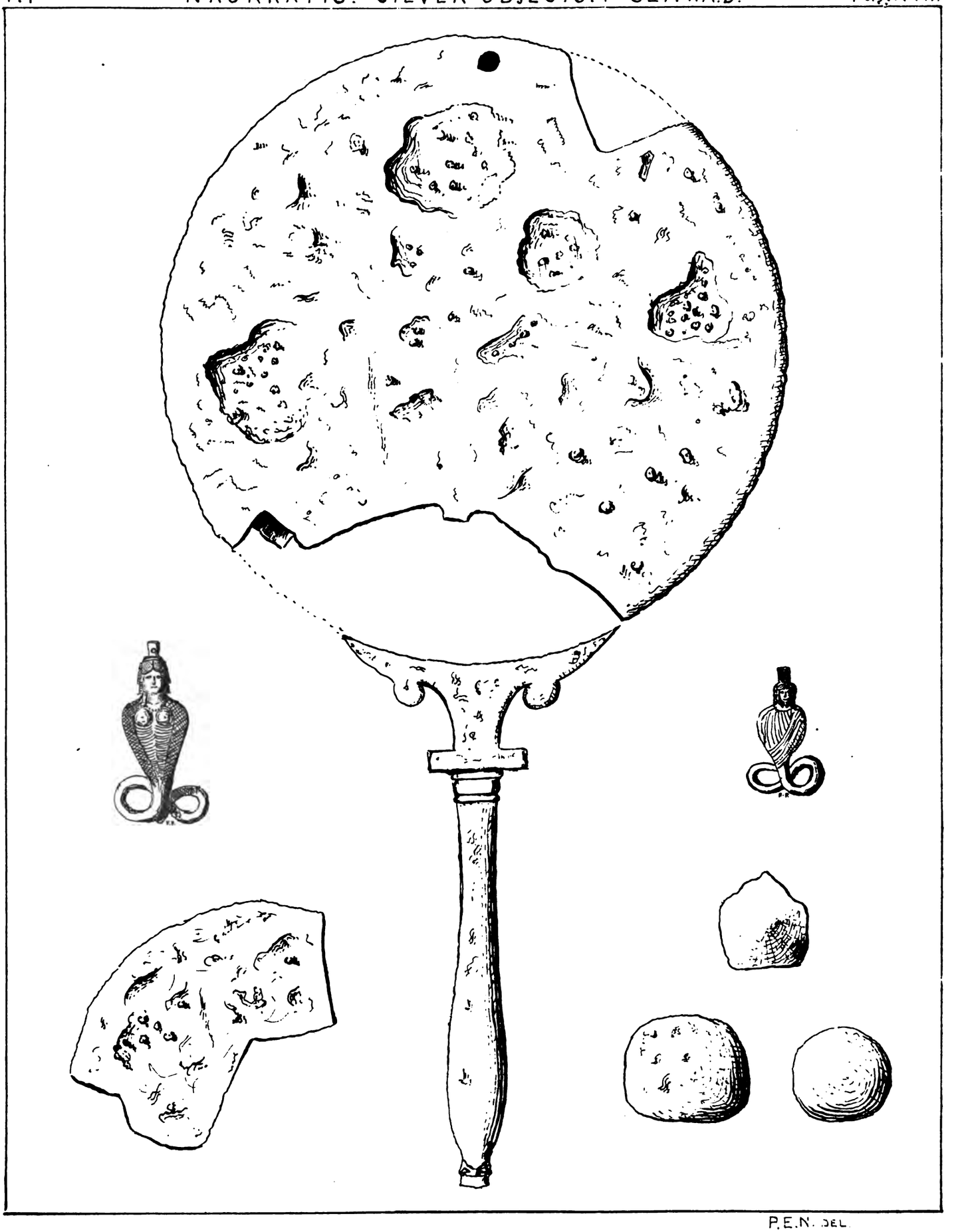
South-East Corner

Great Temenos Wall

W.M.F.P. mens. et del.



W.M.F.P. del.



P.E.N. DEL.

ΠΛΑΤΟΠ
P.E.N. DEL.

1

Soft Limestone. Temenos of Dioskouroi.

2

ΑΜΓΕΛΙΩΝΕΩΣΙΚΡΑΤΟΥΣ
ΔΙΙΘΗΒΑΙΩΙ

White Marble Pylon of Ptolemy II

3

ΗΠΟΛΙΣΗΝΑΥΚΡΑΤΙΤ
ΗΛΙΟΔΩΡΟΝΔΩΡΙΩΝΟΣΦΙΛΟ
ΤΟΝΙΕΡΕΑΤΗΣΑΘΗΝΑΣΔΙΑΒΙΟ
ΣΥΓΓΡΑΦΟΦΥΛΑΚΑΑΡΕΤΗΣΚΑΙ
ΕΝΕΚΑΤΗΣΕΙΣΑΥΤΗΝ

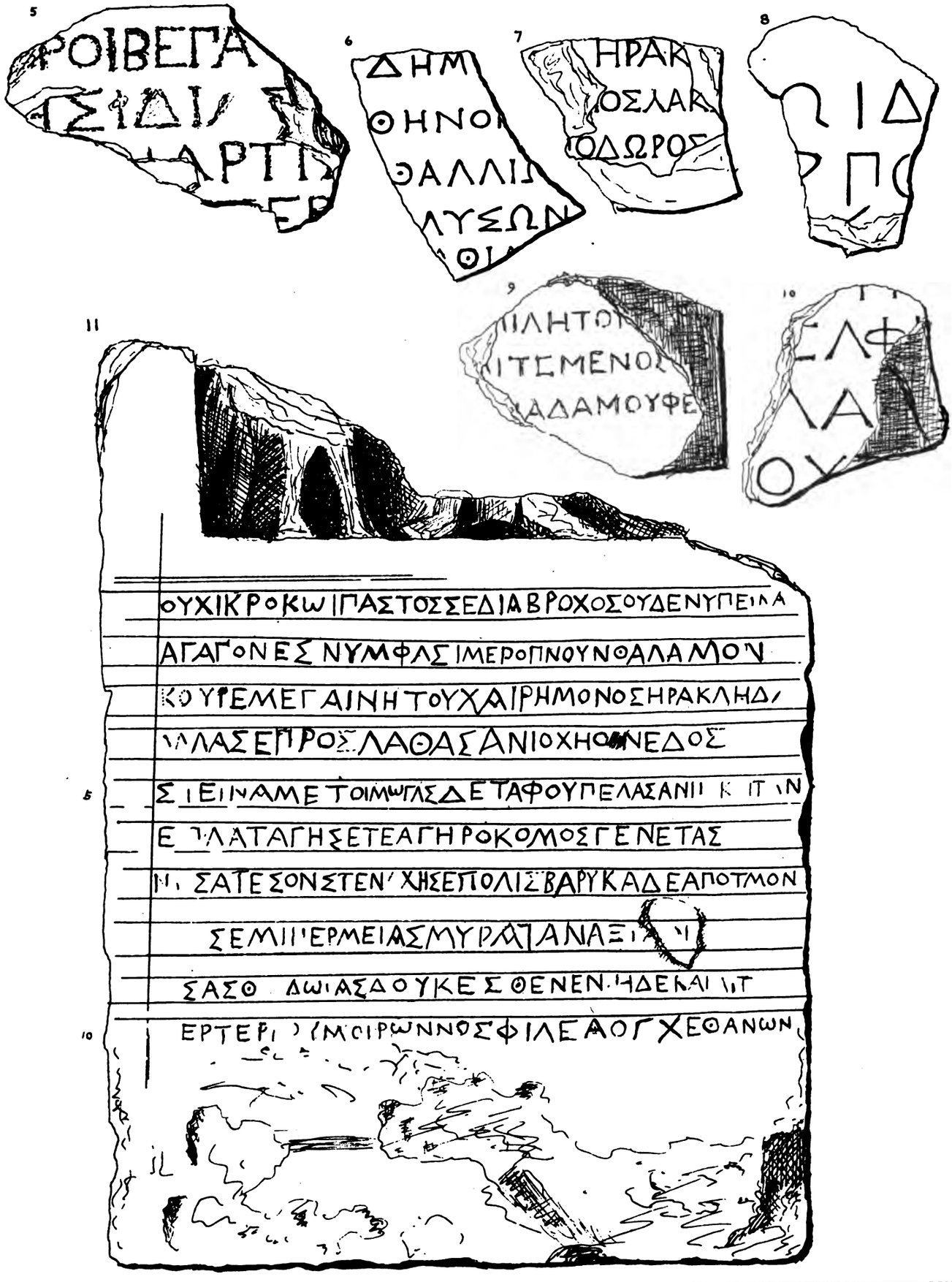
Dark blue Limestone

4

ΚΛΕΑΙΝΕΤΟΣ ΑΡΙΣΤΟΘΕΜΙΟΣ
ΜΑΙΑΝΔΡΙΟΣ ΣΤΡΑΤΩΝΙΔΕΩ
ΤΗΜΓΑΛΑΙΣΤΡΗΝΑΝΕΘΗΚΑΝ
ΑΓΟΛΛΩΝΙ

White Marble.

W.M.F.P. del.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ΕΛΑΤΑΓΗΣΕΤΕΑΓΗΡΟΚΟΜΟΣΓΕΝΕΤΑΣ
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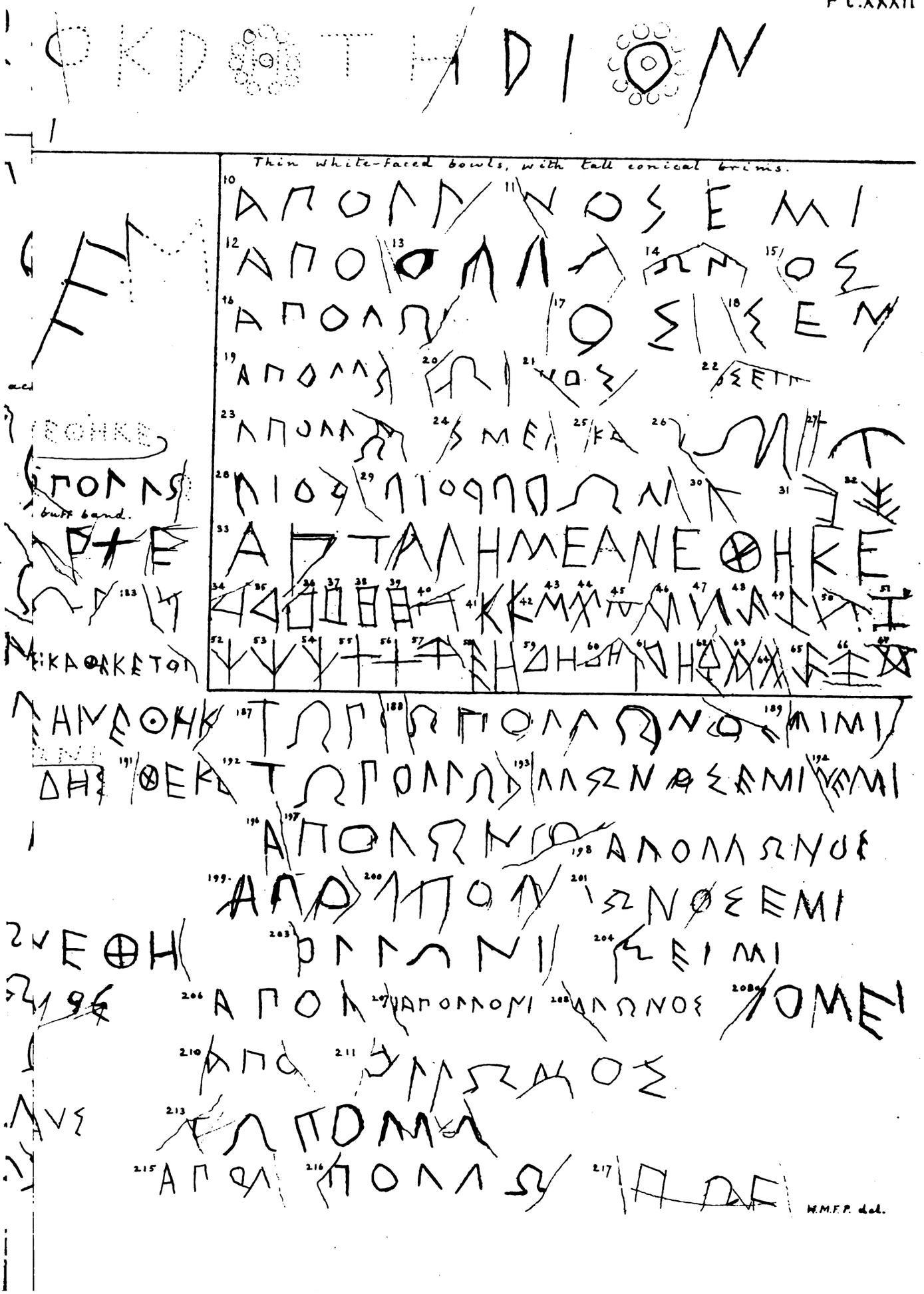
ΣΑΣΟΔΩΙΑΣΔΟΥΚΕΣΘΕΝΕΝΗΔΕΚΑΙΙΤ
ΕΡΤΕΡΙΙΜΟΙΡΩΝΝΟΣΦΙΛΕΑΟΓΧΕΘΑΝΩΝ

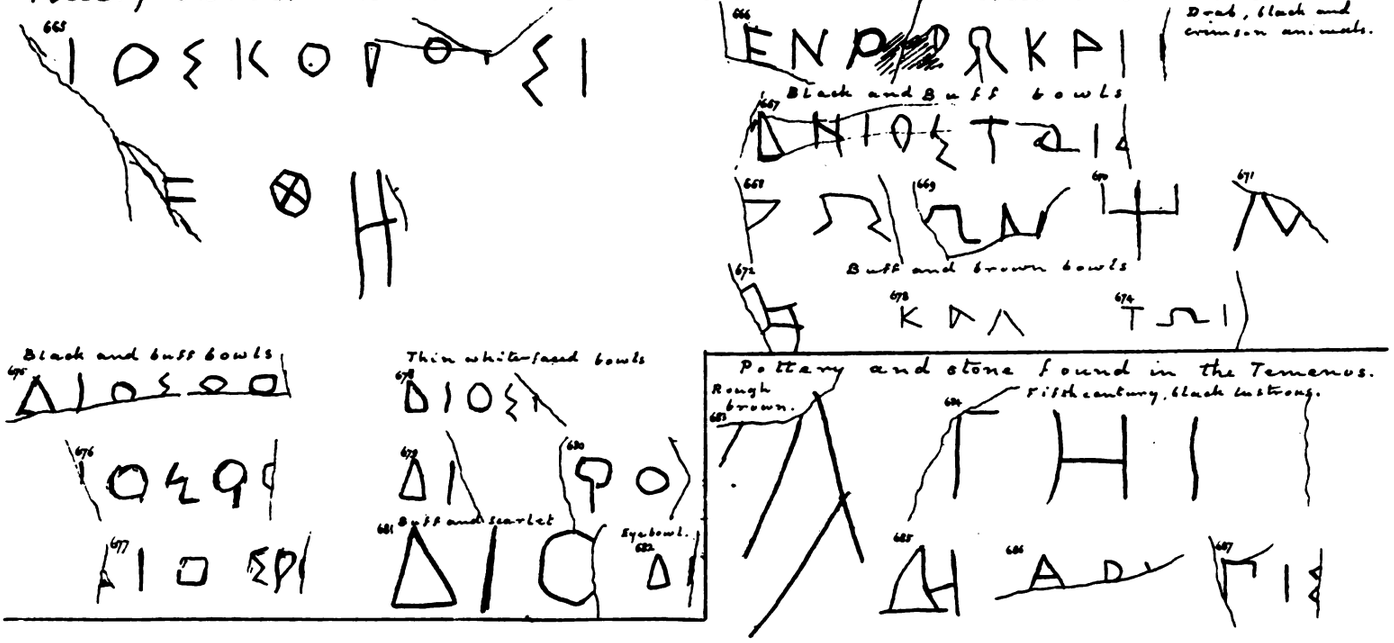
W.M.F.P. del.

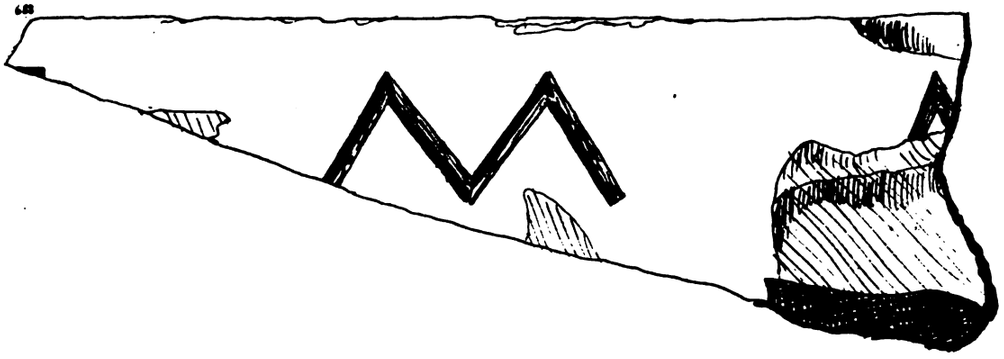

Thin white-faced bowls, with tall conical brims.
buff band.
W.M.F.P. del.

AUKR

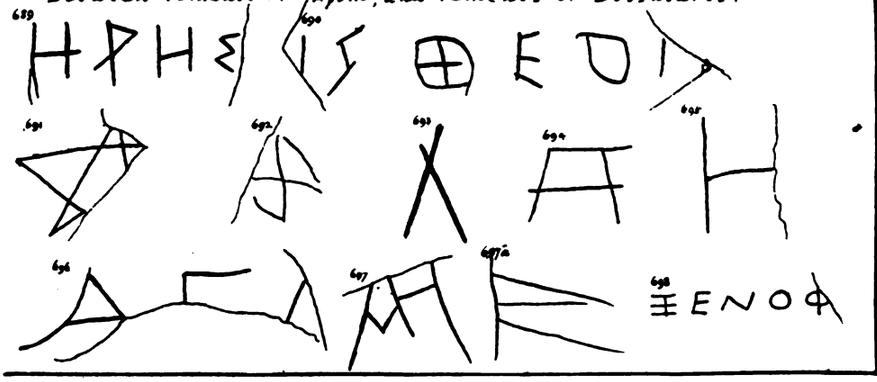
1:1 NAUKRATIS. DEDICATIONS TO DIOSKOUROI, &c. Pl. XXXV.

Pottery buried in sand under West wall of Temenos of Dioskouroi.

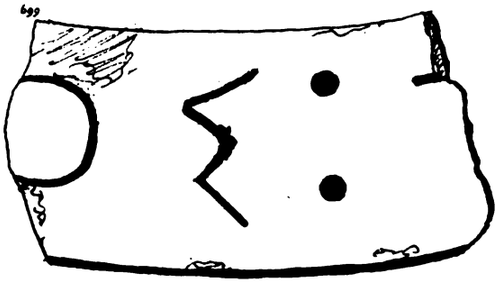


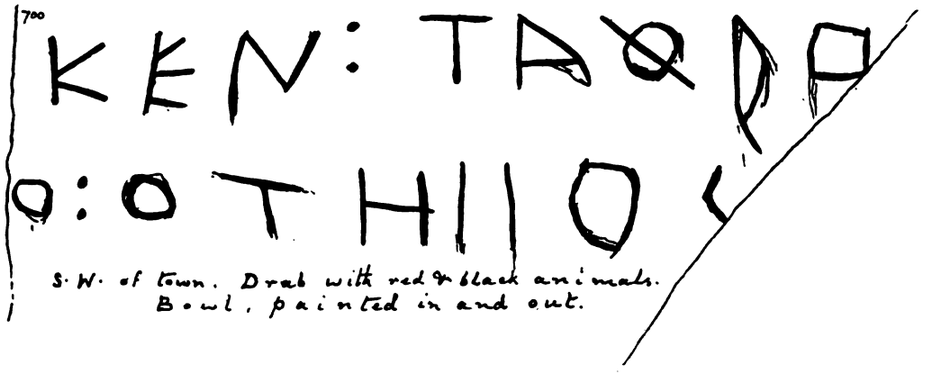


Between Temenos of Apollo, and Temenos of Dioskouroi.



Edge of marble bowl: from scarab factory.





S.W. of town. Drab with red & black animals.
Bowl, painted in and out.

W.M.F.P. del.

Table of the various forms of the Greek Alphabet found on the Apollo pottery at Naukratis.

Forms marked * occur in lines written from r. to l.	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο	π	ϙ	ρ	σ	τ	υ	φ	χ	ψ	ω
I. Soft red-brown * 24.																									
II. Buff & brown & purple 6, 305																									
III. Thick drab 68-79																									
IV. Black & buff & c 81. 125. 254																									
V. Light-brown, thick 2																									
VI. Buff & scarlet 1																									
VII. Buff plain 5																									
VIII. Drab-white & brown 234																									
IX. Black & buff & c 8. 19-14. 124-125. 148-149. 232. 281-288																									
X. Thin white-faced 10-28																									
XI. Eye-bowls 291-323																									
XII. Drab-white & brown 7-9																									
XIII. White-faced 77																									
XIV. Drab-buff & Scarlet 6a																									
XV. Black & buff 102. 149. 196. 197																									
XVI. Rough drab & brown 236. 250. 271. 282. 260. 275. 315																									
XVII. Buff & black 104. 122. 185. 191. 207																									
XVIII. Median 227-229. 252-254																									
XIX. Korinthian * 230																									
XX. Initials & c detached letters																									
a. Amorgos																									
b. Abu Simbel																									
c. Miletos																									

PL. XXXV A.

E.A.G.

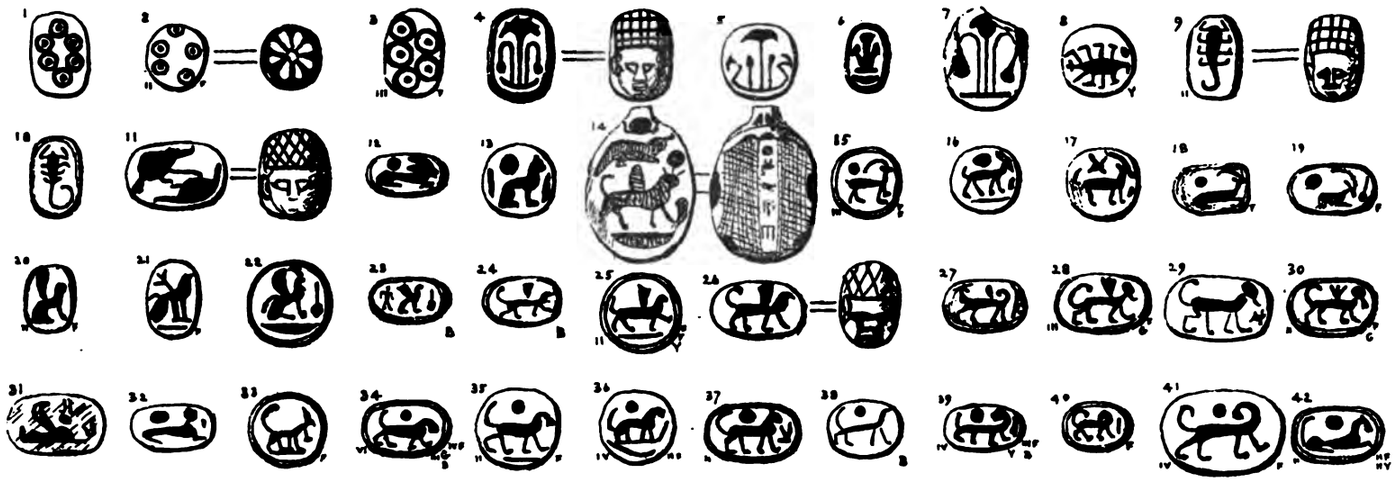
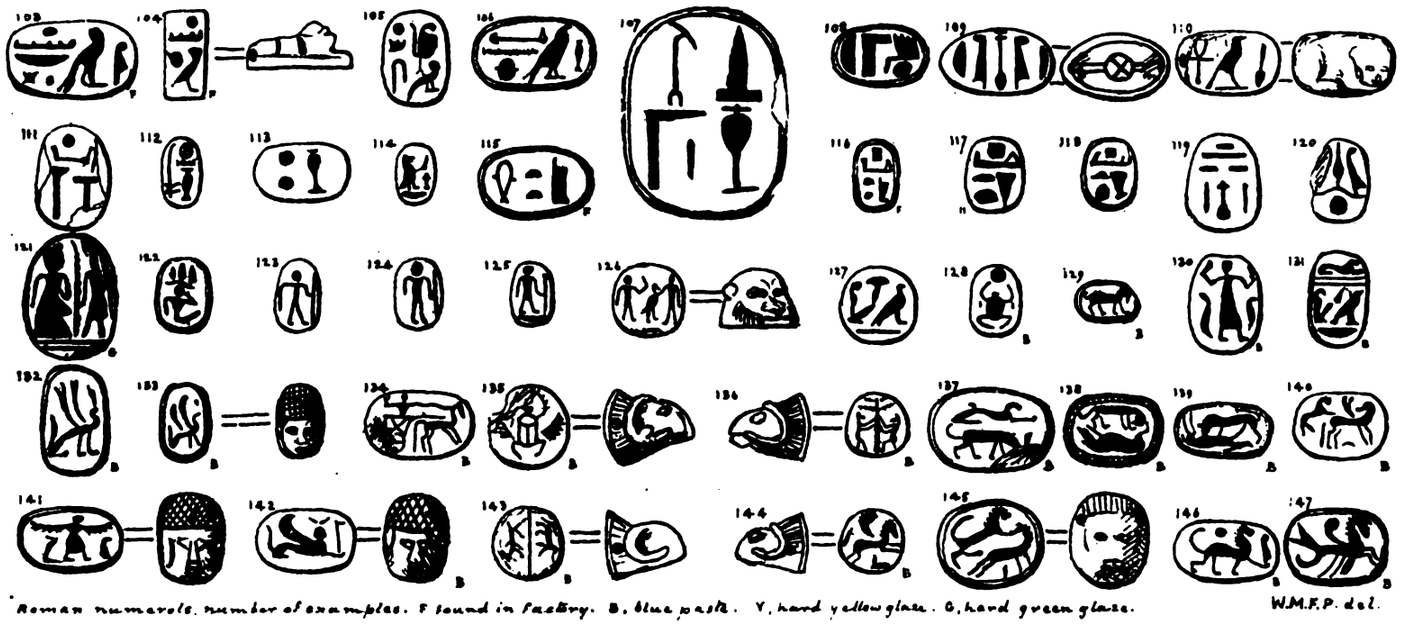
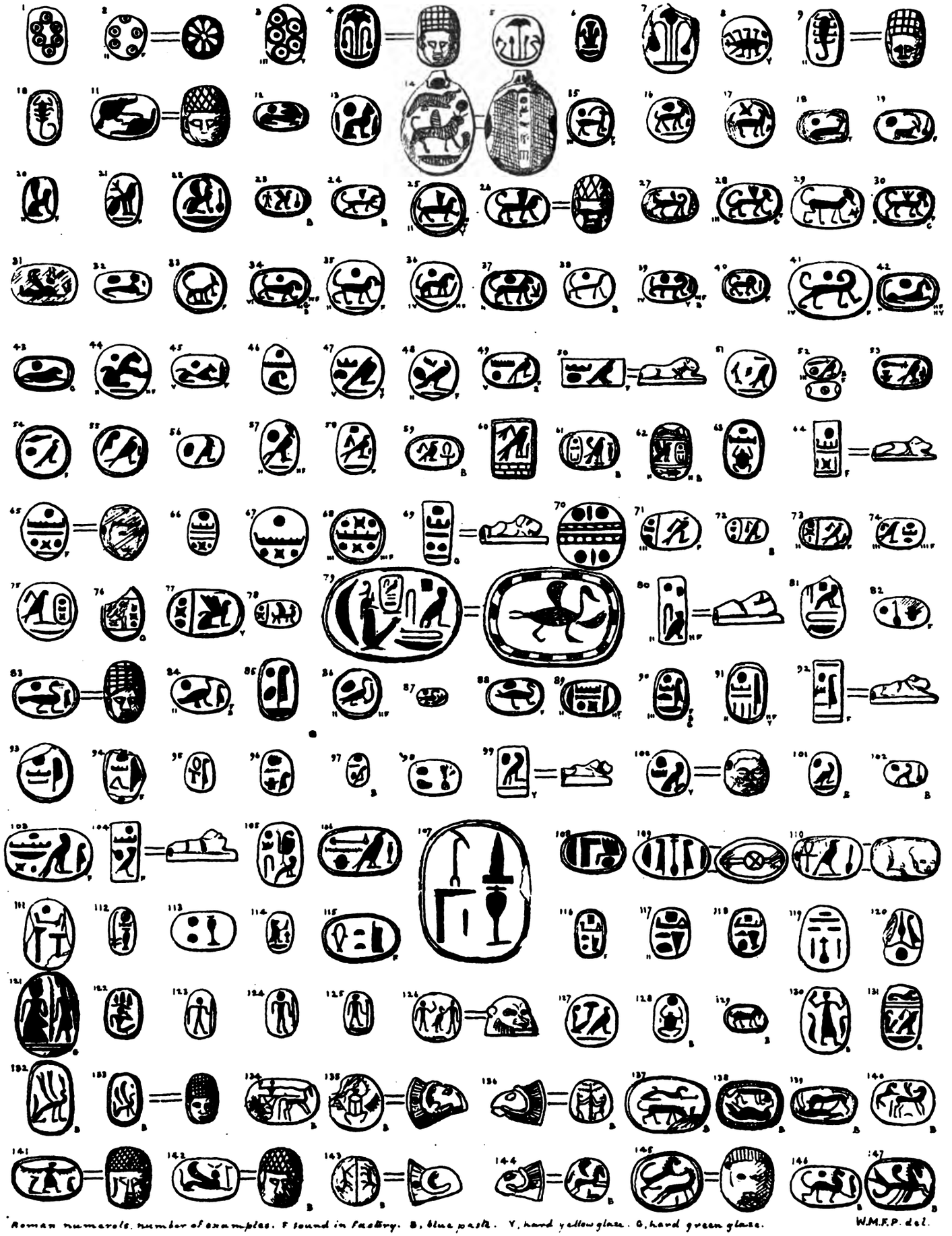


PLATE XXXVI. has been delayed, and will appear with the Plates of M. NAVILLE'S "MEMOIR ON GOSHEN," now in the Press.



Roman numerals, number of examples. F found in Factory. B, blue paste. Y, hard yellow glaze. G, hard green glaze.

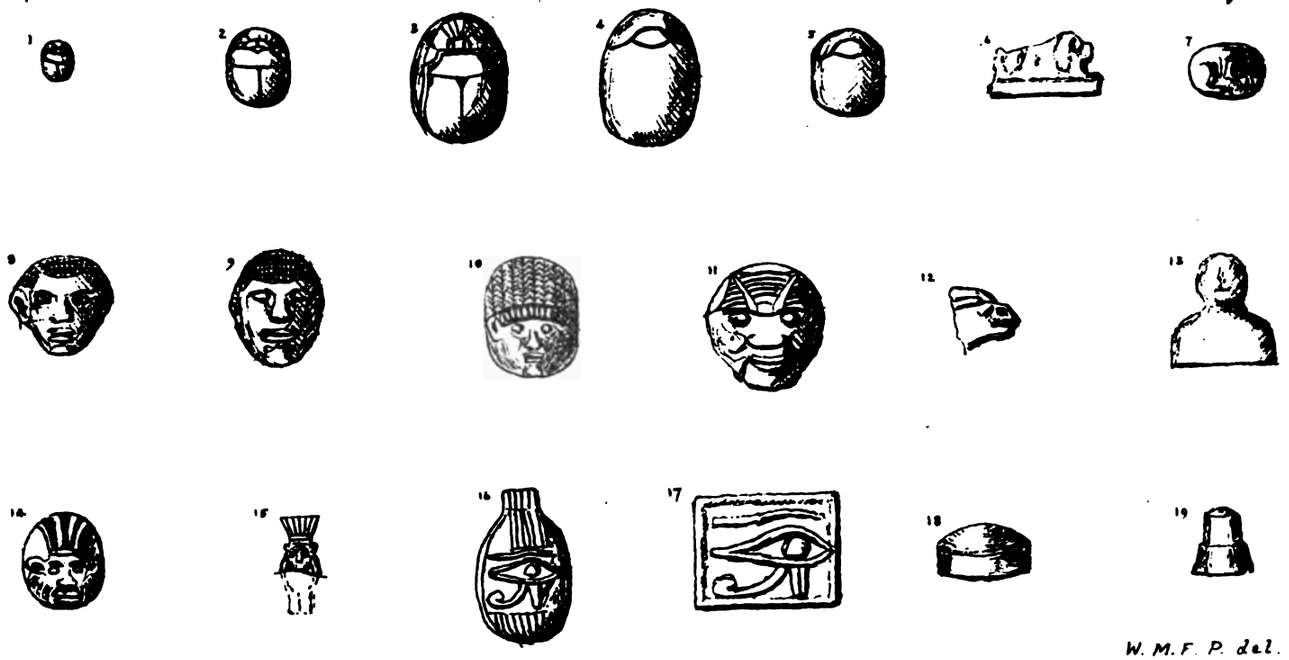
W.M.F.P. del.



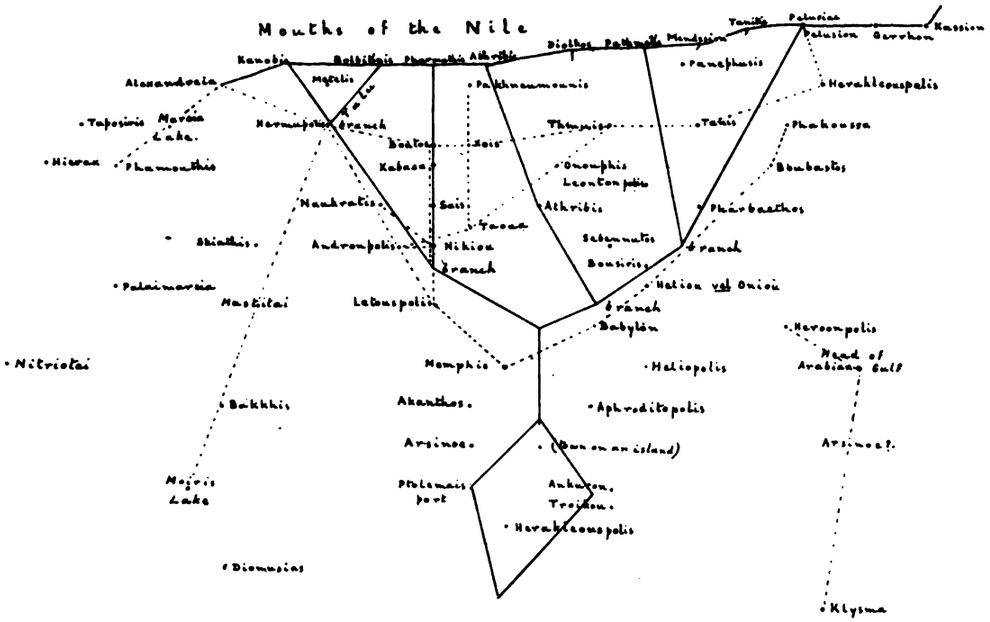
Roman numerals, number of examples. F found in factory. B, blue paste. Y, hard yellow glaze. G, hard green glaze.

W.M.F.P. del.

Impressions of Moulds for making Scarabæi and other Amulets; from the Scarab Factory.



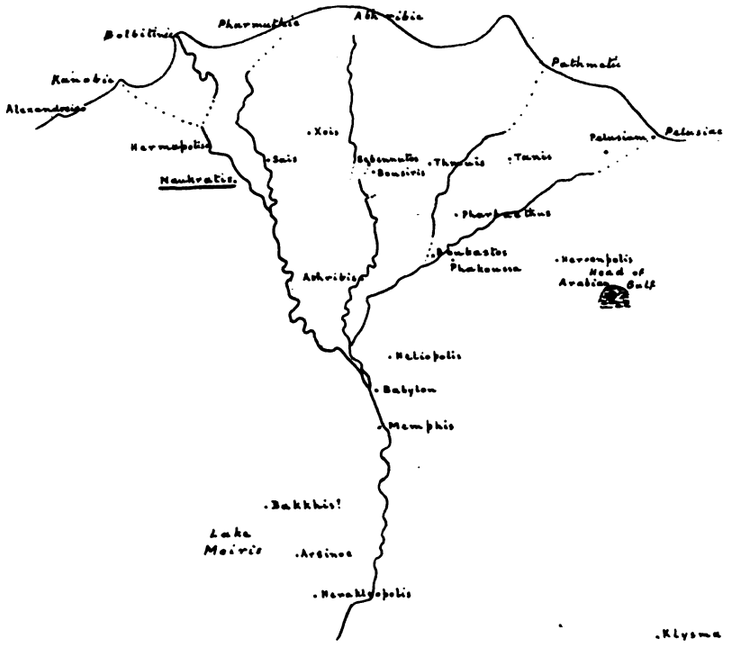
W. M. F. P. del.



THE DELTA,

ACCORDING TO PTOLEMY.

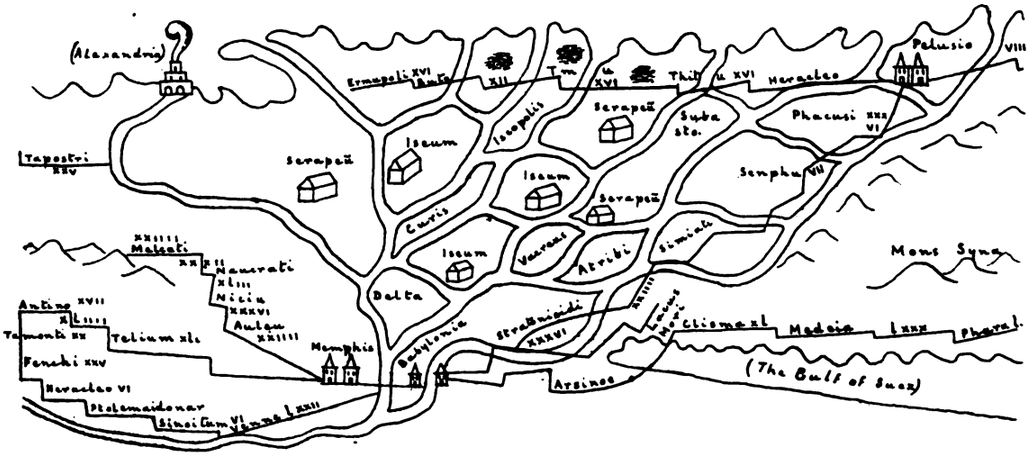
(LINES OF ROADS DOTTED)



SITES IN THE DELTA,

IDENTIFIED WITH THOSE OF PTOLEMY.

Only those streams and canals are here entered which agree most nearly with the branches named by Ptolemy.



THE DELTA,

IN PEUTINGER'S MAP.

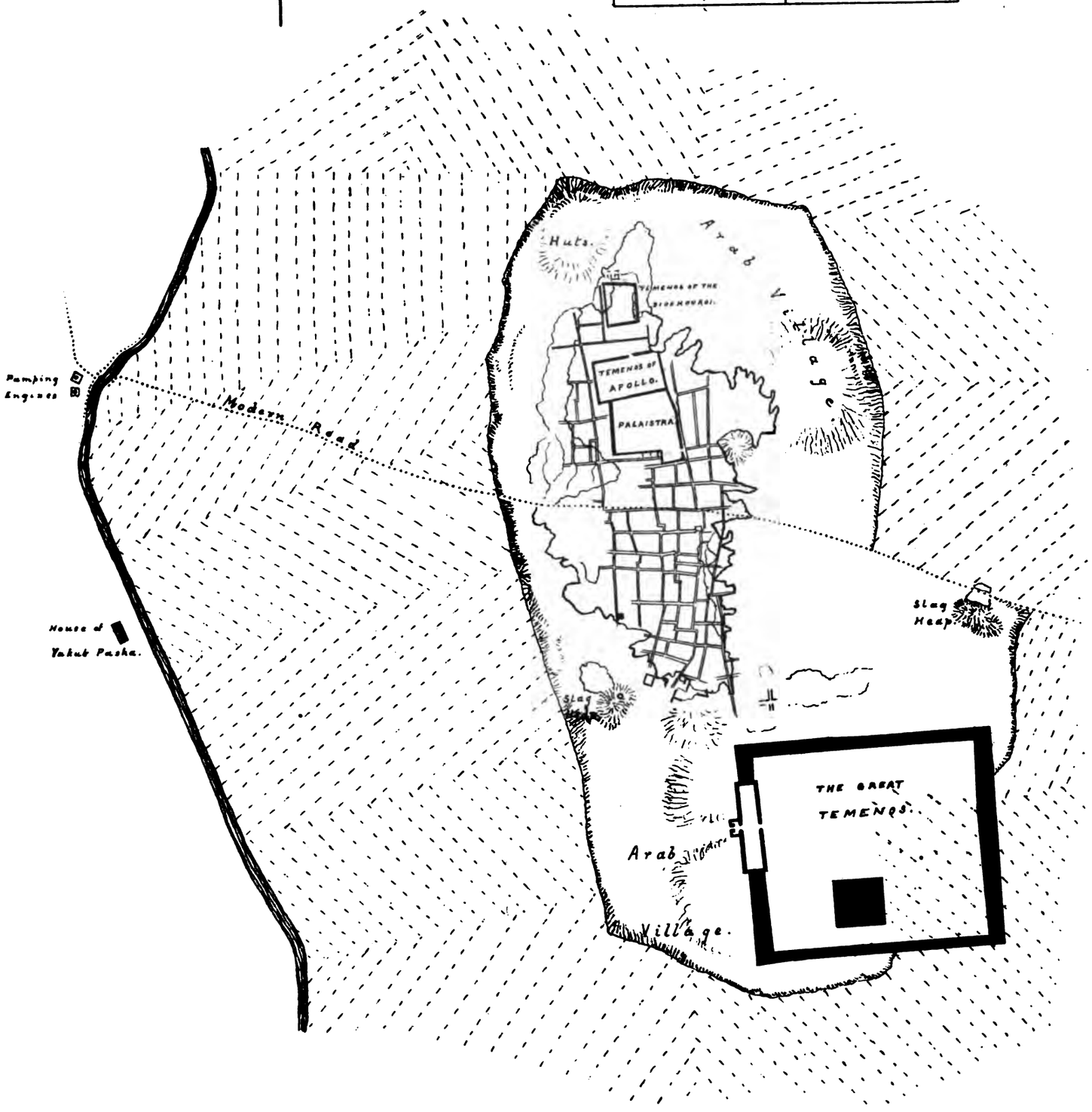
W.M.F.P. del.

Pl. XL

THE SITE OF NAUKRATIS.

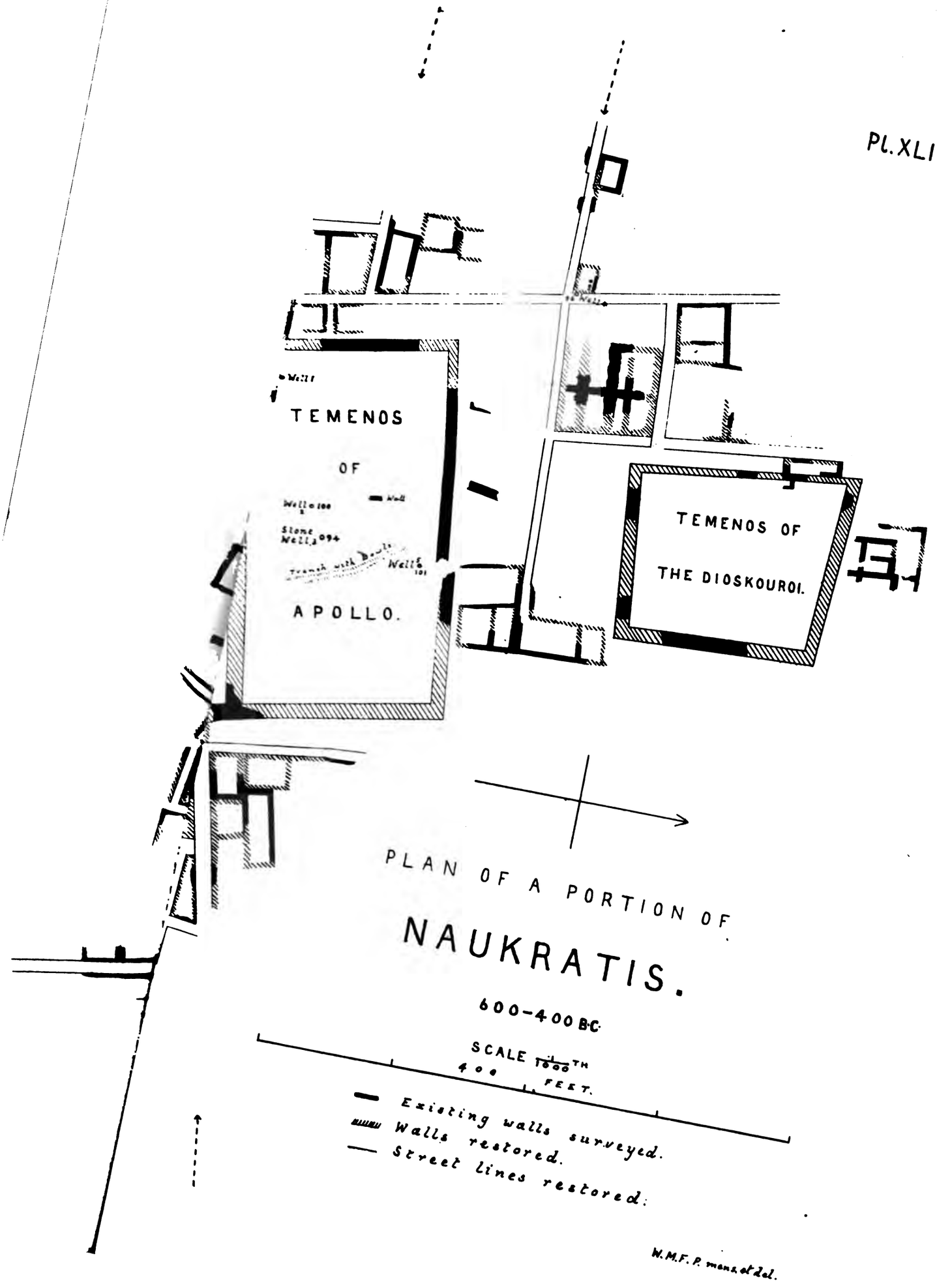
SCALE $\frac{1}{6000}$

Quarter of a Mile.



Village of El Gaief.

W.M.F.P. del.



PLAN OF A PORTION OF
NAUKRATIS.
600–400 B.C.
SCALE 1/1000TH
400 FEET.

DING IN THE GREAT TEMENOS. PL. XLIII

100 Feet.

Solid up to level of passages when built.

Bricked up to level of passages in after times.

Supposed entrances in parts now destroyed below the level

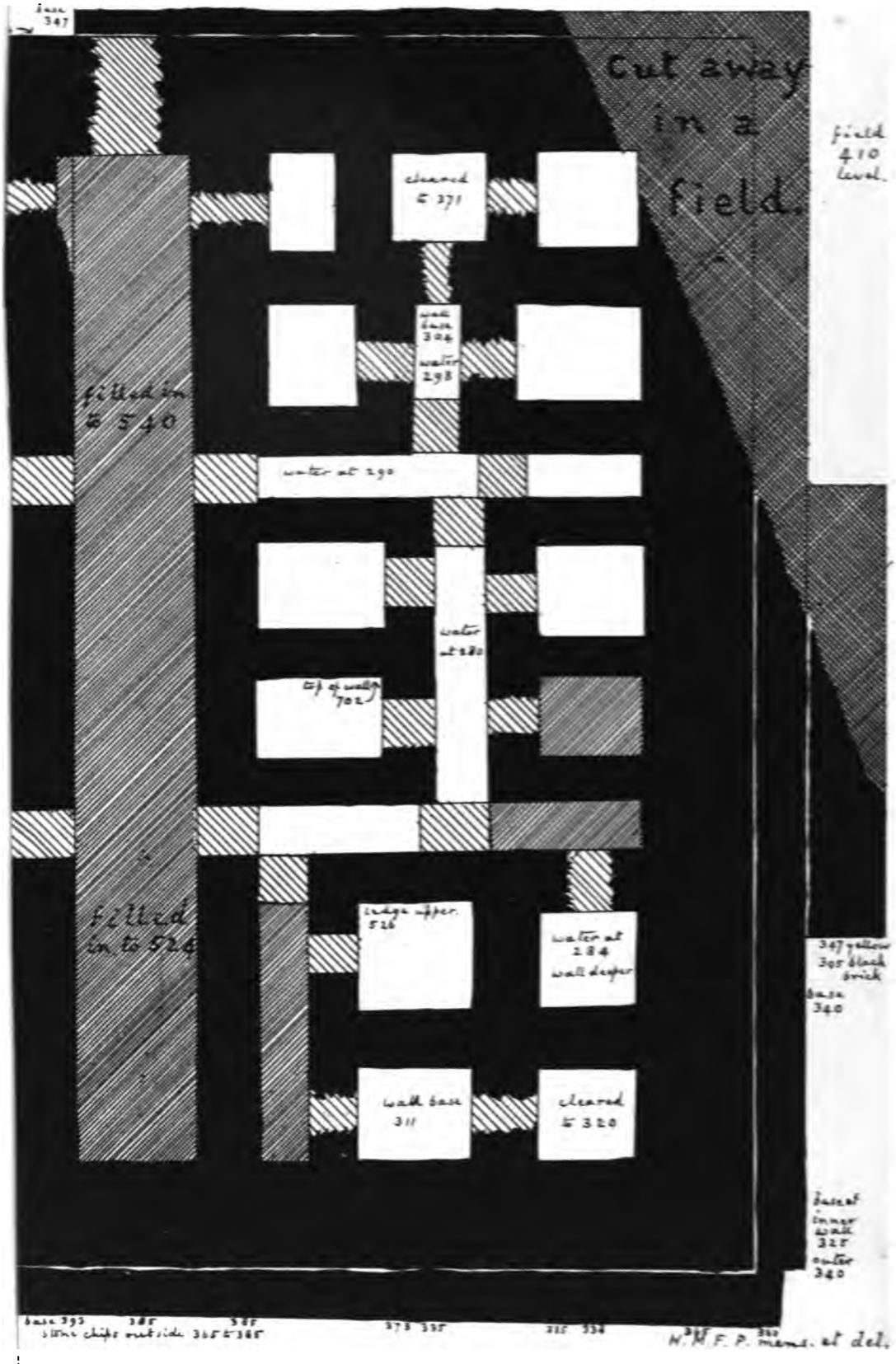


DIAGRAM OF STRATA IN THE TEMENOS OF APOLLO.

PL. XLIV

Level	Temenos Wall	Close by stone well	West of central part	Nearer central part	General series, in and over trench.	Central part over trench	East side of central.	Near preceding	Extreme E.
330		Brilliant incised ware			Chips of black and buff ware, black figures, with brilliant glaze incised; and curve-rimmed black bowls. AΠ8		$D^2 F^2 O^1 S^2$ (AP.1)		
320	Temenos wall	Drab bowls Λ P. and O^3	Pavement of 3rd cent. B.C.?		White faced thin ware with red lines inside, and red figures. (Naukratian) F Cocked-hat lamp.		$A^1 C^{1.2.} E F^{2.5.6.9.} G^{1.2.} L^1 O^1 P Q^4 S^2$ (AP.2) Eyebowls		
310		Limestone chips			Eyebowls from mid & northern part AΠ6.7 Small delicate terracotta heads southern part and lead weight				
300	Dusty					Brilliant incised. $A^1 B^{1.2.2.4} C^{2.4.} F^{1.2.4.5.6.9.} G^{1.2.} K^2 L^{1.5} N. O^{4.} P Q^{1.2.4.} R^1 S^2 V^2 W^3$ (AΠ149)			AP3 vanishes at furthest E. and AP1 & 2 lie on limestone layer.
290	mud under Temenos				Hard Clay. Organic yellow sand, much concreted with phosphatic nodules and bones	$C^4 D^4 F^{1.6.10} O^3. K^2 K^2 L^1 N O^3 Q^1 S^1 T U^2 V^1$. soft yellow paste scored cya. squares. (AΠ195) Eyebowls	yellow line (AP.3) $C^1 F^1 G^2 L^1 O^1 U^2$	Blue glazed bowl. (AP060)	
280	wall, down to basal		(AΠ59) $A^3 B^{3.4} D^5 L^{1.2} P Q^5 V^1$ level of sand AΠ1 or perhaps older as AΠ1 is heaped against it.	Sand AΠ1 of extends out of trench westward. Below the sand AΠ210 extends westward towards the stone wall.	Pottery glazed figures & animals. Bone figure. (organic structure is only 3 ins thick, very sharply defined, most productive at rather N. of the middle, rises to the N. end) Black pottery. D4		L^1 (AP50)	E (AP058)	Thick limestone layer, & hard mud
270	mud				Perfect lamp, tube centre type. Lakythi.		Limestone chips. O^3 (AP40)	yellow line & mud $B^3 F^{2.3.6} G^{1.2.6} L^1$ (AP040)	
260					Legs of statues, some in sand, & AΠ4 $F^{1.9.} G^1 L^1 Q^2$		yellow line (AP30) $C^1 D^1 F^{1.11.} G^2 L^1 O^{1.2.6} T U X^1$	much burnt limestone, with trial pieces unfinished and charcoal	
250					Archaic terracottas, heads. Limestone pan. Legs and feet of figures in limestone AΠ3 Pinax ΑΠΟΛΛΟΝΟΣ ΕΜΙ.	$B^{5.6.} F^6 G^2 L^1 P Q^5 V^1$ (AΠ190) Sand, AΠ1 sinuchoe with inscrip. 2 porcelain hawks. Small very archaic female head	Fragments of limestone bowl Pl. 3, on Sand (AP20) $A^3 F^6 G^2 L^1$	Sand (AP020)	
240					Two limestone horses from a group. AΠ2 ΠΟΛΕΜΑΡΧΟΣ vase (Pl. 3) and coarse red pottery. Lying on and in	$A^1 S^{3.4} C^1 D^5 A F^1 G^1 L^1 O^1 T^2 P V^1 W^3$ (AΠ200) sacr. 8° organic stuff (AΠ205) and pottery $C^1 D^5 L^1 O^{3.5}$		mud $B^3 G^1 O^1 O^3 T$.	
230					Sand stratum, a few inches thick $A^{1.3.} B^{3.4} C^5 F^{2.5.9.} G^{2.4.5.7.} L^1 O^{1.3.} P. Q^1 S^1 T V^1 W^3$ fragment of incised sinochoe, pale drab. Layer of mud with fragments.	Fine mud, fishbones & charcoal. Small chips of red pot. & glazed black & buff. $L^1 O^3 B^5$ (AΠ210)			

Left side of trench 20 ins high

H.M.F.P.

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